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Vol. XIII, No. 10 **OCTOBER, 1924**

JOURNAL
OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION

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THE SEVENTY-THIRD ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DES MOINES, IA., DURING THE WEEK OF AUGUST 31, 1925

The 1925 meetings of the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also be held in Des Moines, during the week of August 31, 1925.

For Association Roster, see page x.

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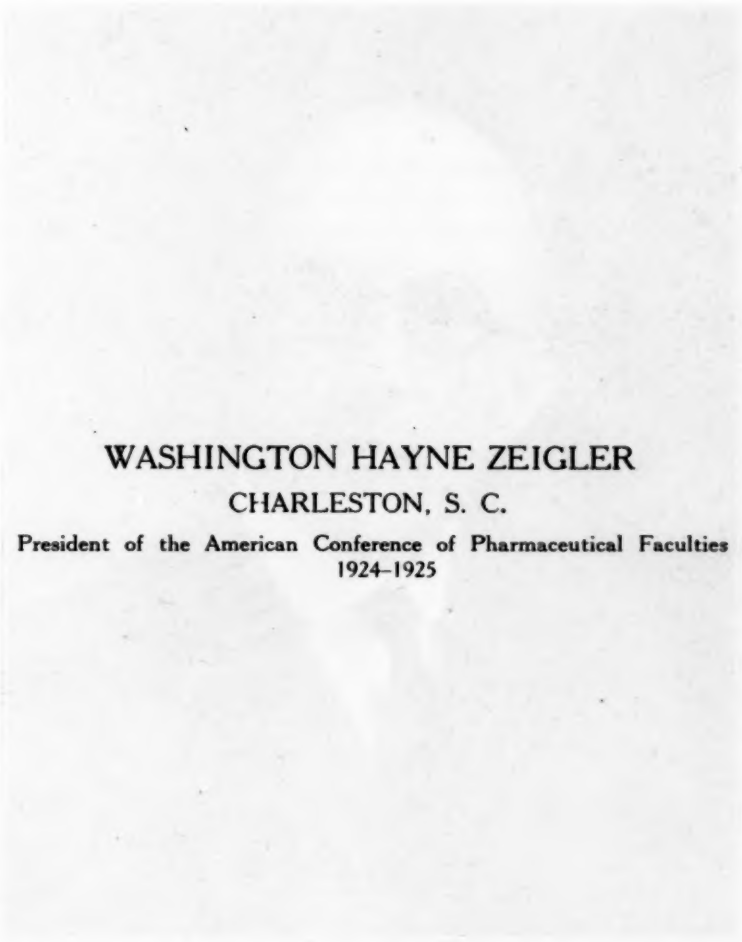
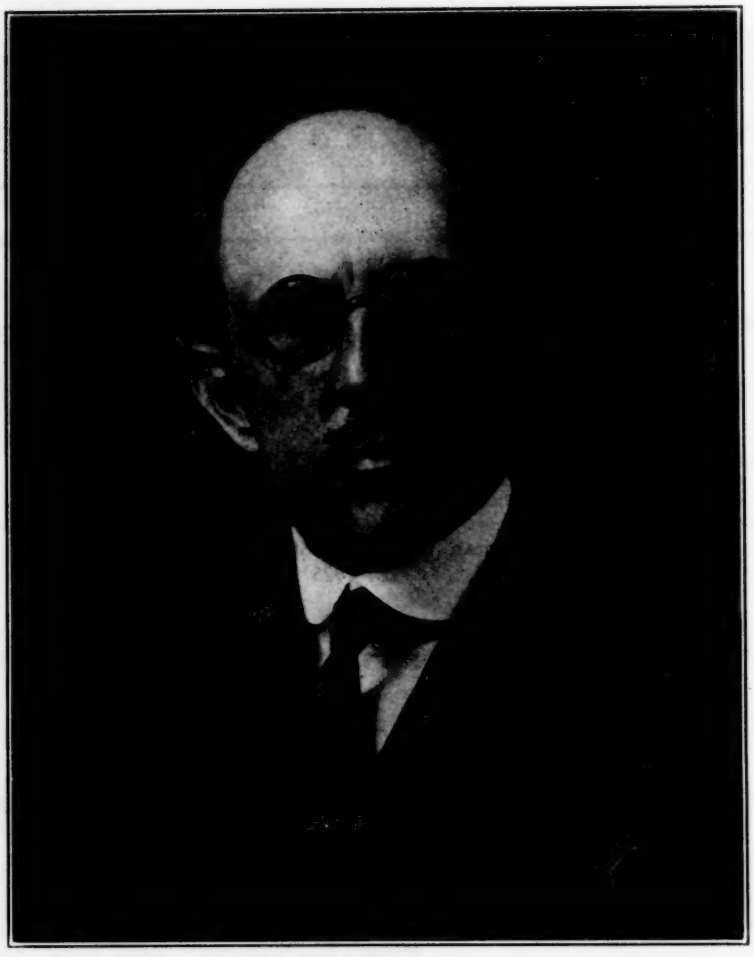


WASHINGTON HAYNE ZEIGLER

CHARLESTON, S. C.

President of the American Conference of Pharmaceutical Faculties
1924–1925



W. H. ZEIGLER.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XIII OCTOBER, 1924 No. 10

WASHINGTON HAYNE ZEIGLER.

Washington Hayne Zeigler, President of the American Conference of Pharmaceutical Faculties, was born in Orangeburg, South Carolina, February 9, 1876. His early education was received at the Mellichamp High School, of his native city. His apprenticeship was served in the drug store of Lowman and Lowman, of Orangeburg, S. C. He matriculated at the College of Pharmacy of the Medical College of the State of South Carolina for the sessions of 1893–1894, and graduated in 1896. He won both the junior and senior college prizes, and also the practical pharmacy medal offered by the State Pharmaceutical Association.

After graduating and receiving license he conducted a pharmacy in the city of Charleston for fifteen years. During this period he devoted a part of his time to the teaching of Botany and Pharmacognosy in the School of Pharmacy of the Medical College of the State of South Carolina. He also attended a series of lectures at the Charleston Medical School during the summer and received a certificate in 1898.

In February 1913, the Legislature, appreciating the necessity of adequate financial support for the proper maintenance of a medical college under modern conditions, and realizing the supreme importance of medical and pharmaceutical training, appropriated a sum sufficient to meet the increasing needs of the institution. With the reorganization of the faculty, Professor Zeigler, after due preparation, was given the chair of Pharmacology and Materia Medica and was made Chairman of the Pharmacy Faculty. His appointment as a full-time professor made it necessary to give up the retail drug business and devote his entire time to teaching and research.

Dr. Zeigler has been very active in both pharmaceutical and medical teaching, as well as in organization and research work. He has served as President of the South Carolina Pharmaceutical Association and of the Pharmaceutical Society of the City of Charleston, and as Vice-President of the American Conference of Pharmaceutical Faculties. He is a past-chairman and secretary of the Section on Education and Legislation of the American Pharmaceutical Association. In 1920, Dr. Zeigler was elected a member of the U. S. P. Revision Committee, and is serving on two important committees—on Scope and on Bio-Assay.

The President of the Conference is a tireless worker for pharmacy, and, in a modest way, he has been a guiding spirit in bringing about prerequisite legislation and the establishment of other requirements that have helped to raise the standards of pharmacy to its present level.

J. M. JORDAN.

EDITORIAL

E. G. EBERLE, EDITOR 253 Bourse Bldg., PHILADELPHIA

POPULARIZING THE PHARMACIST.

CHAIRMAN Robert J. Ruth of the Section on Practical Pharmacy and Dispensing, A. Ph. A., presented a most interesting address at Buffalo, in which he brought out the importance of adherence to ethics by pharmacists in order to have pharmacy worthy of highest appreciation by the public. The keynotes of the address were calls to loyalty and service. He advocated pharmaceutical legislation that would serve the public, and a deeper interest by pharmacists in that which subserves the health of the people.

He was optimistic in his views of the Pharmacy Headquarters Building which will unite pharmacy under one banner. "All divisions of the drug industry," he said, "had much in common, and public health would be conserved by such coöperation."

In the promotion of publicity for pharmacy, Chairman Ruth pointed out that a "National Pharmaceutical Week" could be inaugurated, and for that purpose articles should be prepared and contributed to newspapers and magazines; speakers should address the various business and social clubs throughout the country and in these addresses public health should be the keynote. He advocated the broadcasting of talks so that the general public might be advised not only of the mission and activities of pharmacy but, specifically, of the progress being made with the fund for A. Ph. A. Headquarters, whereby pharmacists hope to render additional needful public service.

He considered that pharmacists were not taking full advantage of their opportunities to acquaint the public with pharmacy nor did they combine their efforts with those of the laity for bringing about not only a better understanding of the purposes of pharmacy, but also legislation which will serve the public best. The Chairman insisted that hospital pharmacists should contribute to the columns of medical and hospital periodicals as well as to pharmaceutical publications, in order that the service of pharmacy may be better understood and appreciated; articles relating to pharmacy should also be prepared for magazine sections of papers and magazines of national circulation.

In concluding his address, Chairman Ruth advised that pharmacists in all states should follow the example set by Massachusetts, and hold conferences with members of the legal profession so that legislation relating to pharmacy may better serve the intended purposes. There was so much in the address that interested those in attendance at the meeting of this section, that it was voted to give the address the widest possible publicity.

Very striking evidence of publicity opportunities was given in the report, at the Buffalo A. Ph. A. meeting, of Director Robert P. Fischelis of the Drug Trade Bureau of Public Information. The results of three bulletins were shown by clippings from papers of all sections of the country. The press seeks informative items and features educational articles for the readers; the possibilities have been proved and the suggestions referred to are timely, they will serve a useful purpose and benefit pharmacy and the public. E. G. E.

RESEARCH AT BUFFALO.

ALL persons having doubts in their minds concerning the actuality or the virility of pharmaceutical research should have been at the Buffalo meeting of the American Pharmaceutical Association; for there, such doubts were completely dispelled by the splendid demonstration that American pharmacy has research problems, has the men capable and desirous of performing the work, has some means, albeit inadequate, to assist such work and lastly has the operative agencies to facilitate and to encourage such work.

A discussion of a few of the factors testifying to the actuality and virility of pharmaceutical research is all well worth our time.

The third annual meeting of the National Conference on Pharmaceutical Research held on August 23rd and chronicled elsewhere in this issue of the JOURNAL was an inspiring event. The actuality of American pharmaceutical research was demonstrated by the presence at the meeting of delegates from ten pharmaceutical associations or groups, all of which are interested in research. The recognition of American pharmaceutical research was demonstrated by the presence of "observers" from the scientific bureaus of the National Government and from the American Medical Association, the American Chemical Society and the Association of Official Agricultural Chemists, all of whom expressed themselves as very favorably impressed by the proceedings. Three years have been spent in perfecting the organization and now, thanks to the Buffalo meeting, the Research Conference has a comprehensive program that is bound to bring results of tremendous value to American pharmacy.

A feature of the 1924 meeting of the Research Conference was the presence as active delegates, of members of the pharmaceutical committees created since 1920 in the three divisions of the National Research Council in which pharmacy has an interest. These persons were not present as official delegates from the Research Council but as delegates from national pharmaceutical bodies. Their presence, however, indicated to those of vision the future relationship of the National Research Council and the National Conference on Pharmaceutical Research. There is absolutely no possibility of friction between the Research Council and the Research Conference since the aims of the two are identical and the methods of operation are sufficiently distinct to prevent working at cross purposes. Those of us who sat at the Buffalo meeting hearing the discussions of the delegates, notably those who are members of the Research Council committees, felt that we were really acting as a Division of Pharmacy, which we pharmacists still hope to see ultimately established in the Research Council. There we saw the pharmaceutical chemists, the pharmaceutical botanists, the Pharmacopœia revisers, the dispensing laboratory men and the statisticians of retail pharmacy conferring on the proper methods of correlating and systemizing their several tasks and passing measures designed to bring their work before the general public.

The National Conference on Pharmaceutical Research, important though its 1924 meeting was, was not the only research factor operating at Buffalo. Immediately preceding A. Ph. A. week, three other research groups gathered at Buffalo for conference and consultation. The Plant Science Seminar, organized so successfully at Minneapolis last year, held a fruitful meeting during one day. During two days,

the instructors in charge of pharmaceutical and dispensing laboratories of colleges of pharmacy held an important series of meetings, which, while at present given to a consideration of teaching and administration methods, will eventually have to turn to the problem of research, the crowning achievement of any laboratory course of instruction. The remarkable work of the Commonwealth Foundation, in studying the knowledge required of the retail pharmacist, is worthy of a special paper. Suffice it here to say that the group in charge of this problem under the leadership of Dr. W. W. Charters and of some of the deans of our pharmacy colleges gave three days to a consideration of the education necessary to the production of a well-equipped practicing pharmacist. Others may differ from the statement that will follow that the statistical work compiled during the past year by those in charge of the work represents research work of the highest type. Nevertheless it is safe to say that a large majority of those present at the Buffalo meeting of the A. Ph. A. did consider the Commonwealth Fund inquiry as one of the best pieces of investigation now being performed for and by American pharmacy.

And lastly, our own American Pharmaceutical Association, for so many years the bearer of the torch of pharmaceutical science, gave a research program worthy of A. Ph. A. traditions. The meetings of the Scientific Section and of the Section on Dispensing were more than ordinarily interesting and at the sessions of these two sections no less than 56 research papers were presented.

A pleasing feature of the sessions of the Scientific Section was the presence of Dr. I. M. Kolthoff of the University of Utrecht, Holland, one of the most fruitful of the world's pharmaceutical research workers, who presented a thoughtful paper on the silver ion concentration of protein silver preparations. The Association honored itself rather than Dr. Kolthoff in electing him an honorary member of the A. Ph. A.

The outstanding feature of the sessions of the Section on Dispensing was the report of Dr. Lascoff on the Recipe Book; the report being in the form of an address with demonstrations of 500 finished preparations and with lantern slide charts. The amount of laboratory investigations made by Dr. Lascoff and his colleagues of the Recipe Book committee is a credit to American pharmaceutical research. In this connection mention must be made of the reports of Chairman Cook of the U. S. P. Revision Committee and of Chairman Scoville of the N. F. Revision Committee, a record of altruistic and impersonal research performed by the members of the two committees.

Mention was made above as to "means, albeit inadequate," to assist research. Under this heading come the annual grants from the A. Ph. A. Research Fund; the awards of 1924–25 being $300 to John C. Krantz, Jr., and D. I. Macht for investigations on digitalis, and $150 to C. C. Haskell for studies of the action of caffeine and morphine in infectious processes. And lastly, the annual prize founded in 1873 by that great practical pharmacist Albert E. Ebert for the best paper presented at each annual meeting of the A. Ph. A. was awarded with pleasing ceremonies at the final session of the Association.

The foregoing summary of the research activities of the Buffalo meeting proves, it is believed, that pharmaceutical research is a virile factor in the scientific progress of America.

H. V. A.

THE PREPARATION, PROPERTIES, AND USES OF SILICO-DUODECITUNGSTIC ACID.*

I. THE PREPARATION OF THE ACID AND ITS SALTS.[1]

BY EDWARD OSCAR NORTH[2] WITH GEORGE D. BEAL.

HISTORICAL.

Silicoduodecitungstic[3] acid was discovered by Marignac (1) in 1863 while preparing ammonium tungstate. The acid was formed during extraction of tungsten from the ore, which contained silica, and, being extremely soluble, was found in the mother liquors. He then prepared the acid by boiling a mixture of tungstic acid with gelatinous silicic acid, obtaining the solid acid by evaporation of the filtered liquid. The sodium, potassium, and ammonium salts were described, and the empirical formula $8MO.20WO_3.2SiO_3$ suggested for the salts. In a second paper (2) in 1864 two other acids were described: tungstosilicic acid, an isomer of the first, to which the formula $12WO_3.SiO_2.4HO + Aq$ was given, and silicodecitungstic acid of the formula $SiO_2.10WO_3.4HO.3Aq$. These acids were separated as mercurous salts, which were quite insoluble but easily decomposed by hydrochloric acid.

Wyrouboff (3) in 1896 followed essentially the procedure of Marignac in preparing the acid, substituting nitric acid for hydrochloric in generating the tungstic acid. Copaux (4) in 1908 made one of the most valuable contributions to the knowledge of these compounds. There were then three acids known, which, in modern nomenclature, had the formulas

A. $SiO_2.12WO_3.2H_2O.31Aq$
B. $SiO_2.12WO_3.2H_2O.22Aq$ } isomers
C. $SiO_2.10WO_3.2H_2O.3Aq$

Copaux prepared "A" in three ways.

1. By reaction in a boiling solution of sodium tungstate, Na_2WO_4, and sodium silicate, Na_2SiO_3 (water glass), the solution being kept neutral with nitric acid. The compound was extracted by ether in the presence of sulfuric acid.

2. By reaction between sodium tungstate and sodium orthosilicate, Na_4SiO_4, in a sealed tube at 150° C. The compound was isolated by means of ether and sulfuric acid.

3. By reaction between boiling solutions of sodium tungstate and water glass made acid with acetic acid. The compound was extracted as before.

Acid "B" was made by Procedure 3 under Acid "A," with the substitution of sulphuric acid for the acetic acid. Acid "C" was formed by boiling "A" with a large excess of ammonia. Silica at first precipitated but almost completely redissolved and the ammonium salt of "C" crystallized from the filtrate.

---

* Contribution from the Department of Chemistry of the University of Illinois.

[1] Read at the 72nd Meeting of the American Pharmaceutical Association, Buffalo, New York, August 25–29, 1924.

[2] From a thesis presented by Edward Oscar North in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Chemistry in the Graduate School of the University of Illinois.

[3] Throughout this paper the term silicotungstic acid will be understood to refer to silicoduodecitungstic acid.

Goddefroy (5), 1876, found that the alkaloidal salts of this acid were very insoluble, and also called attention to the low solubility of the rubidium and caesium salts. Bertrand (6, 7), 1899, published the first detailed study of the alkaloidal salts of the acid. He maintained that the paper of Goddefroy had not been available and was unknown to him, and that his study was entirely independent. He determined the sensitiveness of the reaction with eighteen or more alkaloids and, with Javillier (8, 9), used the acid in the quantitative determination of nicotine as a means of separating the pure alkaloid. Javillier (10) continued the work, studying the compounds of antipyrine (11), atropine, conine, pyramidone and sparteine.

Guillemard (12) in 1903 described the use of the acid in determining the animal bases in the urine, which he referred to as alkaloidal nitrogen. Chapin (13), in 1911, published a direct method for the determination of nicotine in tobacco extracts, precipitating nicotine silicotungstate which was filtered and ignited, the determination being based on the weight of silicotungstic anhydride obtained.

Ferenz and David (14) used the acid for the separation of alkaloids from impure solutions; recovering the alkaloids by decomposition of their salts with sodium hydroxide and ether. Rasmusson (15), 1917, outlined a procedure for the analysis of belladonna, using a correction factor because of the solubility of atropine silicotungstate. Taigner (16), 1919, in studying the salts of atropine, strychnine and cocaine, found that when dried at 120° they all had the same type formula, *viz.*, $12WO_3.SiO_2.2H_2O.4$ alkaloid. This permitted a gravimetric determination of these alkaloids without ignition. Heiduschka and Wolff (17) have studied the ratio of alkaloid to silicotungstic acid in a number of salts, determining the conditions under which these salts are formed. Sindlinger and Mach (18), 1924, have described the determination of pyridine and nicotine. By making allowance for the solubility of the pyridine salt in dilute hydrochloric acid it has been possible to determine this base quantitatively, and by the use of selective solvents for the two salts to determine the percentage of each of the two bases in a mixture.

THEORETICAL.

Of the three methods suggested by Copaux (*loc. cit.*) for the preparation of "A" the first yields the best results. The sealed tube method is cumbersome and not applicable to large amounts, and the acetic acid used in the third method at times causes some reduction of the silicotungstic acid. In the first method, there are at least several sources of difficulties. The sodium tungstate solution must be continuously stirred during the neutralization with nitric acid, since a local excess produces a precipitate of tungstic anhydride which dissolves with difficulty. The water glass, if not neutralized cautiously, yields a troublesome gel. During the heating the reaction of the solution must be frequently determined and nitric acid cautiously added to maintain neutrality.

Sulphuric acid is added in this method to finally liberate the acid, which is extracted by shaking the solution with ether. The ether solution is apparently similar to a hydrate, and is a heavy oily liquid, miscible neither with water nor ether. The sulphuric acid has a tendency to cause a precipitation of tungstic anhydride which is carried down with the ether and promotes the formation of emul-

sions. Sulphuric acid is carried down by the ether complex, cannot be volatilized with the ether, and tends to initiate a spontaneous decomposition on standing.

In the procedure which we have adopted, hydrochloric acid is substituted for the nitric, sulphuric and acetic acids made use of by Copaux. The formation of the acid from sodium tungstate and sodium silicate may be represented by the following reaction:

$$12Na_2WO_4 + Na_2SiO_3 + 17H_2O \rightleftharpoons 4H_2O.SiO_2.12WO_3 + 26NaOH$$

If the reaction is to proceed from left to right it is only necessary to heat the acid to favor hydrolysis of the salts and to neutralize the alkali as it is set free. A slight theoretical excess of sodium silicate over sodium tungstate is used, and upon the slow addition of hydrochloric acid no tungstic anhydride is precipitated. The only turbidity results from the liberation of the excess of silicic acid after the combination has taken place, and this gel is readily removed by filtration. Addition of a large excess of hydrochloric acid does not produce a precipitate. After the reaction is complete, the silicotungstic acid is readily extracted by ether without emulsification forming a distinct bottom layer, and the hydrochloric acid carried down with the complex volatilizes with the ether.

Previous investigators have been well agreed upon all of the properties of this acid except its basicity. Silicotungstic acid is quite stable. It will decompose chlorides and nitrates and is very resistant towards boiling sulphuric and perchloric acids. It is readily reduced by free metals such as copper, iron, aluminum and zinc, blue compounds being formed.

Silicotungstic acid forms salts with mono-, di- and trivalent metals, but not with metals forming the oxide RO_2, according to Wyrouboff (*loc. cit.*). The salts may contain four or eight equivalents of the base. Those which are of the nature of acid salts are very soluble in ether, alcohol and water, the neutral salts much less readily so.

The most interesting property of the acid is that of forming sparingly soluble compounds with many organic bases. These include the secondary and tertiary aliphatic and aromatic amines and quaternary ammonium derivatives. Insoluble salts are not formed by the primary amines. Salts of the secondary bases are usually soluble in hot water, those of the tertiary bases being least soluble. An exception to the last statement is found in the effect of adjacent groups, such as the hydroxyl or carboxyl, which tend to neutralize the basicity of the compound or to render its salts more soluble.

Marignac (2) believed that the acid was octabasic. He found that a solution of a salt containing four equivalents of a base would decompose carbonates and turn blue litmus red. The addition of more base turned the litmus blue, but on standing the red color returned. He also found that the acid was slowly decomposed by an excess of alkali with the formation of normal tungstate and silicate.

When silicotungstic acid is titrated with standard alkali, using methyl orange as indicator, an end-point is obtained when the equivalent of four acid hydrogens have been neutralized. When the acid is titrated in hot solution with standard alkali and phenolphthalein indicator, the equivalent of twenty-six hydrogens are neutralized. Copaux (19) claimed that a sharp, though not permanent, end-point, was obtained with phenolphthalein at a point corresponding to the neutralization

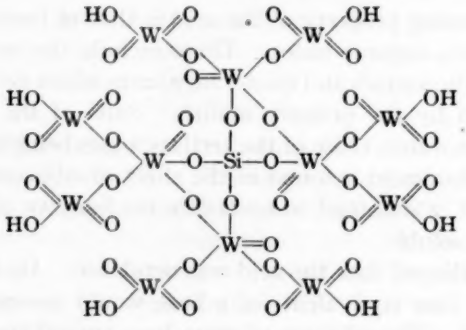
of four hydrogens. This is entirely contrary to results obtained in this laboratory.

While the acid has been found to contain eight replaceable hydrogens, as shown by the formation of normal potassium and ammonium salts, the salts which are formed with tertiary organic bases represent the neutralization of but four equivalents of hydrogen. The empirical formulas obtained upon analysis of these salts, however, do not support the theory of the octabasicity of the acid. In the usual manner of formation of such salts, there is a direct addition of the ions of the acid to the nitrogen of the base. Such an addition would mean that the number of molecules of water which must be eliminated to form the anhydride of the acid would be the same, regardless of whether the acid or the alkaloidal salt was heated. Actual experiments show that only one-half as much water can be eliminated from the alkaloidal salt as from the free acid, forming the same anhydride in each case.

The neutral metallic salts were formed by the addition of an actual excess of alkali to the acid, the alkaloidal salts were precipitated in solutions acid with a strong mineral acid. It would thus appear that there is a condition of equilibrium existing in the acid solution, in which system there are both tetra- and octabasic acids present as members. The presence of a strong acid may repress the ionization of four hydrogens, permitting, at the same time, a dehydration with the formation of a partial anhydride. The condition is thus exactly the same as the state of equilibrium between chromic and dichromic acids, or between a dichromate and a true acid chromate in solution.

The octapotassium salt, prepared in this laboratory, is acidic towards phenolphthalein, neutral towards litmus, and alkaline towards methyl orange and methyl red.

The following is suggested as a structural formula for silicoduodecitungstic acid, showing it as a derivative of orthosilicic acid:



One would predict that in an acid of this type, four hydrogens would have practically equal value and would be replaced simultaneously by a base in the neutralization of the acid. The ionization of the four remaining hydrogens would be of a much lesser degree. Copaux states that the remaining hydroxyl groups are alcoholic. However, neutral metallic salts are formed by the replacement of the eight hydrogens by bases, and a titration with a base using phenolphthalein as indicator shows a gradual endpoint which would be suggestive of a formula of this type.

Rosenheim and Jaenicke (20) reported that the acid formed quadratic crystals with twenty-eight molecules of water and rhombohedral crystals with twenty-two molecules of water. By the use of a dilatometer, they found the transition point at 28.5°.

Copaux (4) claimed that his acids had, respectively, thirty-one and twenty-two molecules of water of crystallization.

Another compound with fifteen molecules of water of crystallization was obtained. All of these forms effloresce rapidly and are therefore indefinite in composition as kept in the laboratory.

The product described in this paper is a white crystalline powder having the formula $4H_2O.SiO_2.12WO_3.5H_2O$. It is completely and rapidly soluble in water, ether, ethyl and other alcohols, acetone, ethyl acetate, and amyl acetate. The water of crystallization is very constant. A sample kept for a period of one year shows the same amount of water of crystallization. The solutions of the acid are very stable. The solid acid is very easy to handle, does not effloresce nor deliquesce during weighing and is not reduced by contact with metals.

EXPERIMENTAL.

Preparation of Silicotungstic Acid.—One thousand grams of sodium tungstate were dissolved in 2000 cc. of water. To the solution were added 75 grams of a 40° Bé. solution of sodium silicate (water glass). The mixture was stirred briskly with a motor stirrer and heated to boiling, while 600 cc. of hydrochloric acid, d. 1.18, were added dropwise from a separatory funnel. The entire time consumed was about ninety minutes. The slight precipitate of gelatinous silicic acid was filtered off and the mixture cooled. Four hundred cc. of the concentrated hydrochloric acid were added and the solution cooled again. This solution in 500-cc. portions was shaken with ether and the bottom oily layer of the ether complex was drawn off. This was gently heated on the steam-bath to remove most of the ether, and the product finally dried in a vacuum oven at 70°. The mixture was stirred repeatedly during the drying on the steam-bath to break up lumps, and was not placed in the oven until it could be ground in a mortar. An 85% yield was obtained.

Analysis of the Acid.—Separation of the tungsten and silica was effected by the method of Perillon (22), wherein the WO_3 was volatilized in a current of gaseous hydrochloric acid. The silica was then volatilized by means of hydrofluoric and sulfuric acids. The weight of silicotungstic anhydride was determined by ignition of the acid. The tungsten as volatilized could not be readily collected, and its weight was therefore determined by difference.

	Found.		Theory for $4H_2O.SiO_2.12WO_3.5H_2O$.
H_2O	5.49%	5.55%	5.389%
SiO_2	2.04%	2.05%	1.996%
WO_3	92.46%	92.37%	92.615%
	$SiO_2:WO_3$::1:11.76		1:12

Titration of Acid. Methyl Orange Indicator.

Weight of sample	0.5024 gram	0.5217 gram
Cc. $N/1$ KOH consumed	0.6699	0.6976
Wt. equivalent to 1000 cc. $N/1$ KOH	750.0 grams	747.4 grams
Equivalents per mole	4.008	4.02
Equivalent weight of anhydride, ave.	708.4	
Theory	711.07	

Titration of Acid. Phenolphthalein Indicator.—This titration was carried out in a boiling solution, by adding standard potassium hydroxide solution until a permanent red color was obtained, then cooling the solution and titrating the excess of alkali with standard acid.

Weight of acid	0.5188 gram	0.5174 gram
Cc. $N/1$ KOH	4.391	4.483
Wt. equivalent to 1000 cc. $N/1$ KOH	118.1 grams	115.4 grams
Equivalents per mole	25.5	26.0
Theory	26.0	26.0

The reaction in this titration is the exact reverse of that previously given for the formation of the acid and is a substantiation of that reaction. The silicotungstic acid has been completely decomposed into potassium tungstate and potassium silicate, since the solution now gives a heavy precipitate with concentrated hydrochloric acid. If, however, the hydrochloric acid is titrated gradually into the hot alkaline solution mentioned above, the silicotungstic acid is reformed.

Preparation and Analysis of Potassium Silicotungstate.—This salt was prepared by adding a slight excess of potassium carbonate to a solution of the acid. The salt was recrystallized twice from hot water. The water of crystallization was determined by igniting the salt. The silicotungstic anhydride was determined by adding a solution of cinchonine hydrochloride to a solution of the salt in dilute hydrochloric acid with ignition of the cinchonine silicotungstate precipitated. The filtrate from this precipitate was evaporated with sulfuric acid and the residue of potassium sulfate gently ignited. The oxides of silicon and tungsten were separated by the method of Perillon as in the analysis of the acid.

Analysis.	Obtained.		Theory for $4K_2O.SiO_2.12WO_3.14H_2O$.
H_2O	7.10%	6.91%	7.26%
SiO_2	1.86%	1.80%	1.73%
WO_3	80.19%	80.38%	80.16%
K_2O	10.85%	10.91%	10.85%

Titration of Potassium Salt in Hot Solution.—The potassium salt, in boiling aqueous solution, was titrated with standard potassium hydroxide, using phenolphthalein as indicator, in the same fashion as the free acid. The solution after the titration was found to yield a dense precipitate when strongly acidified with hydrochloric acid.

Weight of salt	0.7386 gram	0.7420 gram
Cc. of $N/1$ KOH consumed	3.695	3.75
Salt titrated by 1000 cc. $N/1$ KOH	199.98	197.8
Equivalents	17.4	17.6
Theory	18.0	

This is regarded as further proof of the octabasic character of the acid.

Preparation and Analysis of the Ammonium Salt.—The ammonium salt was prepared by adding a slight excess of ammonium hydroxide to a solution of the acid. The ammonium salt was a dense microcrystalline substance, only slightly soluble in water. On ignition of the salt the water of crystallization and the ammonia were driven off, leaving silicotungstic anhydride. The silica and tungstic anhydride were determined as in the acid. Ammonia was determined by distilling the salt with an excess of alkali, receiving the ammonia in standard acid.

Analysis.	Obtained.		Theory for $4(NH_4)_2O.SiO_2.12WO_3.H_2O$.
H_2O	0.80%	0.93%	0.58%
$(NH_4)_2O$	6.69%	6.61%	6.78%
SiO_2	2.00%	1.96%	1.95%
WO_3	90.46%	90.62%	90.68%
$SiO_2:WO_3$	1:11.71	1:11.96	1:12

Preparation and Analysis of the Alkaloidal Salts.—All of the salts, unless otherwise specified, were precipitated by addition of a solution of silicotungstic acid to a solution of the alkaloidal hydrochloride in hydrochloric acid about 0.6 N. After

filtration the salts were washed with approximately 1% hydrochloric acid and dried at a temperature between 100° and 120°.

To determine the amount of anhydride present a weighed amount of the salt was ignited in an electric muffle. The loss in weight represented alkaloid and water of crystallization. In some cases, the composition was further checked by determining nitrogen according to Kjeldahl.

Pyridine Silicotungstate.—This is a white microcrystalline powder which is quite soluble in hot dilute hydrochloric acid.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_5H_5N$ (m. wt. 3196.6): $SiO_2.12WO_3$, 88.99%. $C_5H_5N + H_2O$, 11.01%. Found: $SiO_2.12WO_3$, 89.02%, 89.00%; $C_5H_5N + H_2O$, 10.98%, 11.00%.

Quinoline Silicotungstate.—This was a white pulverulent substance, apparently less soluble than pyridine silicotungstate.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_9H_7N$ (m. wt. 3396.7); $SiO_2.12WO_3$, 83.75%. $C_9H_7N + H_2O$, 16.25%. Found: $SiO_2.12WO_3$, 83.65%, 83.68%. $C_9H_7N + H_2O$, 16.35%, 16.32%.

Nicotine Silicotungstate.—Freshly distilled water-white nicotine was quickly dissolved in dilute hydrochloric acid and precipitated with an excess of silicotungstic acid. The liquid containing the amorphous precipitate was heated to boiling and allowed to cool, obtaining a white crystalline product, not salmon colored as described by Bertrand (7).

The product was dried at 60°.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.2C_{10}H_{14}N_2.5H_2O$ (m. wt. 3294): $SiO_2.12WO_3$, 86.34%; $C_{10}H_{14}N_2 + H_2O$, 13.66%. Found: $SiO_2.12WO_3$, 86.22%, 86.24%; $C_{10}H_{14}N_2 + H_2O$, 13.78%, 13.76%.

Another specimen was prepared and dried at 100°. The nicotine used was not water-white and the salt had a yellow tint.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.2C_{10}H_{14}N_2$ (m. wt. 3204): $SiO_2.12WO_3$, 88.75%; $C_{10}H_{14}N_2 + H_2O$, 11.25%. Found: $SiO_2.12WO_3$, 88.25%, 88.05%; $C_{10}H_{14}N_2 + H_2O$, 11.75%, 11.95%.

Quinine Silicotungstate.—This was a white pulverulent compound extremely insoluble in water and dilute acids.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.2C_{20}H_{24}N_2O_2$ (m. wt. 3528.9): $SiO_2.12WO_3$, 80.60%; $C_{20}H_{24}N_2O_2 + H_2O$, 19.40%. Found: $SiO_2.12WO_3$, 80.47%, 80.51%; $C_{20}H_{24}N_2O_2 + H_2O$, 19.53%, 19.49%.

Cinchonine Silicotungstate.—This was a white microcrystalline product extremely insoluble in water and dilute acids. The last traces of water of crystallization are removed with difficulty. This compound was heated for six hours at 120° without appreciable change.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.2C_{19}H_{22}N_2O.2H_2O$ (m. wt. 3504.9): $SiO_2.12WO_3$, 81.15%; $C_{19}H_{22}N_2O + H_2O$, 18.85%. Found: $SiO_2.12WO_3$, 81.15%, 81.35%. $C_{19}H_{22}N_2O + H_2O$, 18.85%, 18.65%.

Morphine Silicotungstate.—A buff-colored compound which is moderately soluble in alcohol and dilute acids.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{17}H_{19}NO_3$ (m. wt. 4021.3): $SiO_2.12WO_3$, 70.73%; $C_{17}H_{19}NO_3 + H_2O$, 29.27%, N, 1.37%. Found: $SiO_2.12WO_3$, 70.39%, 70.56%; $C_{17}H_{19}NO_3 + H_2O$, 29.61%, 29.44%; N, 1.44%.

Codeine Silicotungstate.—A buff-colored precipitate slightly soluble in alcohol and dilute acids.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{18}H_{21}NO_3$ (m. wt. 4077.3): $SiO_2.12WO_3$, 69.74%; $C_{18}H_{21}NO_3 + H_2O$, 30.26%. Found: $SiO_2.12WO_3$, 69.51%, 69.65%; $C_{18}H_{21}NO_3 + H_2O$, 30.49%, 30.35%.

Apomorphine Silicotungstate.—This compound resembled in color and solubility the salts of morphine and codeine.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{17}H_{17}NO_2$ (m. wt. 3949.2): $SiO_2.12WO_3$, 72.02%; $C_{17}H_{17}NO_2 + H_2O$, 27.98%. Found: $SiO_2.12WO_3$, 72.15%, 71.94%; $C_{17}H_{17}NO_2$, 27.85%, 28.06%.

Narceine Silicotungstate.—This compound was buff colored when first precipitated. It dissolved in hot dilute hydrochloric acid and on cooling was deposited in reddish crystals.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{23}H_{27}NO_8$ (m. wt. 4661.8): $SiO_2.12WO_3$, 61.01%; $C_{23}H_{27}NO_8 + H_2O$, 38.99%; N, 1.20%. Found: $SiO_2.12WO_3$, 61.14%, 60.97%; $C_{23}H_{27}NO_8 + H_2O$, 38.86%, 39.03%; N, 1.22%.

Narcotine Silicotungstate.—This was a yellowish pulverulent compound, very insoluble in water and dilute acid.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{22}H_{23}NO_7$ (m. wt. 4533.5): $SiO_2.12WO_3$, 62.74%; $C_{22}H_{23}NO_7 + H_2O$, 37.26%; N, 1.24%. Found: $SiO_2.12WO_3$, 62.55%, 62.50%; $C_{22}H_{23}NO_7 + H_2O$, 37.45%, 37.50%; N, 1.31%.

Strychnine Silicotungstate.—This salt was previously prepared by Taigner (*loc. cit.*). The product obtained in this laboratory agrees with the one which he has described. The compound was extremely insoluble and required long washing with dilute hydrochloric acid to remove the excess of silicotungstic acid. The color was faintly yellow.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{21}H_{22}N_2O_2$ (m. wt. 4217.5): $SiO_2.12WO_3$, 67.45%; $C_{21}H_{22}N_2O_2 + H_2O$, 32.55%; N, 2.64%. Found: $SiO_2.12WO_3$, 67.68%, 67.46%; $C_{21}H_{22}N_2O_2 + H_2O$, 32.32%, 32.54%; N, 2.46%.

Brucine Silicotungstate.—It had a slight bluish tint and was very insoluble in water and dilute acids. Like the strychnine salt long washing was required to remove the excess of silicotungstic acid.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{23}H_{26}N_2O_4$ (m. wt. 4457.9): $SiO_2.12WO_3$, 63.82%; $C_{23}H_{26}N_2O_4 + H_2O$, 36.18%. Found: $SiO_2.12WO_3$, 63.56%, 63.57%; $C_{23}H_{26}N_2O_4 + H_2O$, 36.44%, 36.33%.

Cocaine Silicotungstate.—A white microcrystalline salt, already mentioned by Taigner (*loc. cit.*).

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{17}H_{21}NO_4$ (m. wt. 4093.5). $SiO_2.12WO_3$, 69.60%; $C_{17}H_{21}NO_4 + H_2O$, 30.40%. Found: $SiO_2.12WO_3$, 69.80%, 69.70%; $C_{17}H_{21}NO_4 + H_2O$, 30.20%, 30.30%.

Caffeine Silicotungstate.—This first precipitated as a white amorphous compound but changed to pale yellow crystals on standing.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_8H_{10}N_4O_2$ (m. wt. 3657): $SiO_2.12WO_3$, 77.78%; $C_8H_{10}N_4O_2 + H_2O$, 22.22%. Found: $SiO_2.12WO_3$, 77.60%, 77.50%; $C_8H_{10}N_4O_2 + H_2O$, 22.40%, 22.50%.

Theobromine Silicotungstate.—This formed as a faint yellow powder.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_7H_8N_4O_2$ (m. wt. 3600.8): $SiO_2.12WO_3$, 78.99%; $C_7H_8N_4O_2 + H_2O$, 21.01%; N, 6.23%. Found: $SiO_2.12WO_3$, 78.77%, 78.84%; $C_7H_8N_4O_2 + H_2O$, 21.23%, 21.16%; N, 6.10%.

Veratrine Silicotungstate.—The compound had a slight purple color, which was deepened by heating in dilute sulphuric acid. A discrepancy existed between the composition as determined by theory and analysis. The salt was prepared from several different lots of alkaloid with invariably the same composition. Heiduschka and Wolff (17) state that the 1:4 compound could only be obtained by precipitation in alcoholic solution.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{32}H_{49}NO_9$ (m. wt. 5246.5): $SiO_2.12WO_3$, 54.22%; $C_{32}H_{49}NO_9 + H_2O$, 45.78%. Found: $SiO_2.12WO_3$, 55.55%, 55.51%; $C_{32}H_{49}NO_9 + H_2O$, 44.45%, 44.49%.

Colchicine Silicotungstate.—This was a bright yellow amorphous salt.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{22}H_{25}NO_6$ (m. wt. 4477.3): $SiO_2.12WO_3$, 63.53%; $C_{22}H_{25}NO_6 + H_2O$, 36.47%; N, 1.25%. Found: $SiO_2.12WO_3$, 63.55%, 63.45%; $C_{22}H_{25}NO_6 + H_2O$, 36.45%, 36.55%; N, 1.21%.

Jensen (23) claims to have prepared a salt in which the ratio of acid to base was 1:5.

Atropine Silicotungstate.—This salt was also prepared by Taigner (*loc. cit.*). It is a white crystalline compound, slightly soluble in hot dilute hydrochloric acid. The solubility, however, is slight enough to permit of quantitative precipitation from a concentrated solution.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{17}H_{23}NO_3$ (m. wt. 4037.4): $SiO_2.12WO_3$, 70.45%; $C_{17}H_{23}NO_3 + H_2O$, 29.55%; N, 1.39%. Found: $SiO_2.12WO_3$, 70.05%, 70.23%; $C_{17}H_{23}NO_3 + H_2O$, 29.95%, 29.77%; N, 1.46%.

Hyoscyamine Silicotungstate.—Like the atropine salt, this compound was white, crystalline and moderately soluble.

Analysis. Calculated for $2H_2O.SiO_2\ 12WO_3.4C_{17}H_{23}NO_3$ (m. wt. 4037.4): $SiO_2.12WO_3$, 70.45%; $C_{17}H_{23}NO_3 + H_2O$, 29.55%; N, 1.39%. Found: $SiO_2.12WO_3$, 70.34%, 70.47%; $C_{17}H_{23}NO_3 + H_2O$, 29.66%, 29.53%; N, 1.30%.

Berberine Silicotungstate.—This was a saffron-colored compound. Pictet (24) gives $C_{20}H_{17}NO_4$ as the composition of berberine; Schmidt (25), $C_{20}H_{19}NO_5$. Schmidt's formula was used in the following calculations.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{20}H_{19}NO_5$ (m. wt. 4293): $SiO_2.12WO_3$, 66.25%; $C_{20}H_{19}NO_5 + H_2O$, 33.75%; N, 1.31%. Found: $SiO_2.12WO_3$, 66.00%, 66.06%; $C_{20}H_{19}NO_5 + H_2O$, 34.00%, 33.94%; N, 1.27%.

Hydrastine Silicotungstate.—This was a pale yellow amorphous compound.

Analysis. Calculated for $2H_2O.SiO_2.12WO_3.4C_{21}H_{21}NO_6$ (m. wt. 4413.4): $SiO_2.12WO_3$, 64.45%; $C_{21}H_{21}NO_6 + H_2O$, 35.55%; N, 1.27%. Found: $SiO_2.12WO_3$, 64.27%, 64.20%; $C_{21}H_{21}NO_6 + H_2O$, 35.73%, 35.80%; N, 1.25%.

SUMMARY.

1. Silicoduodecitungstic acid has been prepared in a much more stable form than previously known by a simplification of a method devised by Copaux.

2. The acid was found to have the empirical formula $4H_2O.SiO_2.12WO_3.5H_2O$. The acid formed normal salts with potassium and ammonium in which eight atoms of hydrogen were replaced by a base.

3. A difference in the degree of ionization of the acid hydrogens was observed. in that titrations of the acid by means of a base with methyl orange or methyl red as indicator show a sharp endpoint when four of these hydrogens have been replaced.

4. The acid forms stable salts with tertiary organic bases. The salts of a large number of alkaloids have been prepared, the majority of which are so insoluble as to indicate the possibility of employing them in a quantitative procedure.

5. The salts of the tertiary bases, precipitated from acid solution, show a partial dehydration of the same order as that existing in a dichromate.

6. All of the phases of this investigation are being continued.

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URBANA, ILLINOIS,
AUGUST, 1924.

(Part II will appear in a succeeding issue.)

PHYTOCHEMICAL NOTES.*

No. 94. Oil of *Echinacea angustifolia*.[1]

BY FRITZ BISCHOFF.

Two samples of a volatile oil, recently discovered by Professor Lloyd in the root of *Echinacea angustifolia*, were submitted by him to this laboratory. He had observed that the yield from the fresh roots was somewhat greater, *viz.*, 1.5 p. c., than that from the dry roots, *viz.*, 1.25 p. c. However, the physical constants of both oils were found to be very nearly identical, the most characteristic being the remarkably low density of 0.80. The results of this preliminary study indicate that the oils consist for the most part of a single constituent, which is very probably a tetrahydrosesquiterpene with two double bonds. Over 80% of the oil, either from the fresh or dried roots, boils within a range of 8°. By fractionation it was possible to obtain 40% of the total oil boiling within 2°. The analysis for carbon and hydrogen, the boiling point range (at 260° C.) and the fact that the substance adds on an amount of bromine equivalent to two double bonds pointed to the empirical formula

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* From the laboratory of Edward Kremers.

[1] History of the Discovery of the Volatile Oil of Echinacea Root.

In the working of *Echinacea* on a large scale by means of the extracting apparatus employed in my laboratory, the content of the concentrator gradually changes from a highly alcoholic menstruum to one which, if the drug be fresh, and not fully dried, becomes practically an aqueous liquid.

It was noticed in the manipulation that when this liquid was withdrawn from the concentrator and allowed to stand, an oily substance separated and floated on the surface, this being in considerable amount when large batches (1000 lbs. each) were manipulated.

In the finishing of the preparation for use of physicians, alcohol was employed as a diluent of the mixture as a whole, the amount being established by another constituent of Echinacea quite different from this oily separate, which, but without any recognition whatever of its presence, became a part of the final product.

On further examination and separation of the oil, it was found that on standing it separated an extraneous coloring material, the greater part of it becoming an overlying, practically transparent oil. This, decanted and filtered, but without further manipulation, constitutes the oil you have received, and which so excited my interest as to lead me to feel assured it was worthy of scientific examination.

Very truly yours,

JOHN URI LLOYD, May 17, 1924.

$C_{15}H_{28}$. The density (0.797 at 15°) indicates that there are no cycles in the compound. The relationship existing between density and number of cycles is shown in Table I. It will be noticed that the difference in density between the compound in question and that for aliphatic sesquiterpenes (0.84 − 0.80 = 0.04) is about the same as the difference between the densities of cadinene and tetrahydrocadinene (0.921 − 0.888 = 0.033).

TABLE I.

Formulas.	No. of cycles.	Density.	Index of refraction.
$C_{15}H_{24}$	3	0.935–0.910	1.50–1.49
$C_{15}H_{24}$	2	0.92–0.90	1.5–1.50
$C_{15}H_{28}$	2	0.888	..
$C_{15}H_{24}$	1	0.873	1.49
$C_{15}H_{24}$	0	0.84	1.53
$C_{15}H_{32}$	0	0.77	..

Dehydrogenation of the hydrocarbon $C_{15}H_{28}$ with sulphur did not yield either the cadalene or eudalene of Rusicka (*Helv. Chim. Acta*, 5, 344, 1922), and while this is not conclusive proof in itself that the compound contains no cycles it is additional evidence for the chain structure and also shows that the compound does not belong to the eudalene or cadalene groups of sesquiterpene derivatives.

With the exception of the hydrogenation product no solid derivatives have thus far been obtained from the hydrocarbon $C_{15}H_{28}$ with bromine, hydrobromic acid, acetic acid, nitrosyl chloride, sulphuric acid, etc. Oxidation with dilute permanganate yielded carbon dioxide and hexoic acid (b. p. 180° C., liquid at −17° C.). Four out of the seven possible hexoic acids are eliminated by these constants. The acids which remain as possibilities are diethyl acetic acid, methyl *n* propyl acetic acid and methyl isopropyl acetic acid. The isolation of the hexoic acid, as one of the abbau products, proves conclusively that the hydrocarbon $C_{15}H_{28}$ is not a straight chain compound, for normal hexoic acid boils at 205° C. and has a melting point of 8.0° C.

On hydrogenating the $C_{15}H_{28}$ hydrocarbon catalytically in the presence of Pahl's palladium, a saturated hydrocarbon was obtained, the carbon and hydrogen analysis checking for $C_{15}H_{32}$. The compound is insoluble in concentrated sulphuric acid and melts sharply at 8.2° C. Normal pentadecane melts at 10.0° C. The densities (0.7727 and 0.7724 at $\frac{15°}{4°}$) for the hydrocarbon $C_{15}H_{32}$ under observation and for normal pentadecane are the same out to the third decimal places. The difference in melting points is additional proof that the hydrocarbon $C_{15}H_{32}$ and its parent $C_{15}H_{28}$ are not straight chain compounds.

As to the reason why the fresh roots yield more oil than the dry, it has been observed that on exposure to the air the oil from the fresh (or dry root) becomes viscous and finally hard and it is therefore very probable that the tetrahydrosesquiterpene is slowly oxidized by the air when the roots are dried, thus cutting down the yield.

EXPERIMENTAL PART.

Constants of Echinacea Oil.—The indices of refraction, densities and boiling point ranges for the oils from the fresh and dried roots are very nearly the same. $n_{25°}$ C. = 1.4490 for both oils. $d\frac{15°}{15°}$ = 0.802 for the oil from the fresh roots and

0.792 for the oil from the dry roots. Both are optically inactive. B. p. (740 mm.) fractions for 100 grams of oil from fresh roots: 9.7 grams below 252° C. (uncor.), 79.5 grams between 252–257° C., and 6.4 grams between 257–260° C. $n_{25°}$ C. = 1.4492, d $\frac{15°}{15°}$ = 0.797 for portion distilling between 252–257° C. By repeated fractionation it was found possible to obtain 40 grams boiling at 258.5–260° C. and 4 grams boiling at 256–258.5° C., 60° per cent of the oil from the dried roots boiled over 257° C. on fractionation. The oils contain no free acids. The neutrality equivalent of the fresh oil was found to be over 3000, so that the amount of esters present is negligible. A combustion for carbon and hydrogen was made on the fraction distilling 252–257° C. Found 85.7% C, 14.4 per cent H_2. Theory for $C_{15}H_{28}$, 86.5% C, 13.6% H. Theory for $C_{15}H_{30}$, 85.7% C, 14.3% H.

Bromination.—Samples of the higher boiling fractions were suspended in glacial acetic acid and cooled in an ice-bath. Bromine was slowly added from a burette until a positive test for bromine was obtained with starch iodide paper. In order to prevent loss of bromine vapors, a layer of conc. H_2SO_4 was used over the bromine in the burette.

18.44 grams oil absorbed 28.0 grams Br.

Theory for $C_{15}H_{28}$ is 28.3 grams Br.

The brominated oil was separated by pouring the suspension in water, and was dried over $CaCl_2$. It was light yellow in color. At about −80° C. (solid CO_2) it turns to a glass which fractures conchoidally, but does not crystallize. At about −20° C. the glossy mass turns viscous. Preliminary experiments indicate the dehydrogenation of this tetrabromide may be brought about by heating with aniline at 100° C., although the reaction is accompanied by decomposition. Aniline hydrobromide crystals (soluble in water) were obtained.

Permanganate Oxidation.—To 39.0 grams of the higher boiling fraction of the Echinacea oil, suspended in 600 cc. of water, 48 grams of $KMnO_4$ were added in 3.0-gram portions. Mechanical agitation was used. Each portion of $KMnO_4$ was added only after the preceding portion had disappeared, the presence of permanganate being indicated by a pink ring on spotting out with filter paper. The oxidation was carried out at room temperature and required three days. The final mixture was alkaline to phenolphthalein. One portion was steam-distilled in its original state, the remainder was filtered free of MnO_2, rendered acid to H_2SO_4 and steam-distilled. Steam distillation from alkaline solution gave an oil, free from aldehydes or ketones (negative tests with neutral sulphite solution on shaking over night and with p. nitro phenyl hydrazine), which was probably unchanged Echinacea oil. The acid distillation also yielded unchanged oil, but in addition an oily acid, partly soluble in water, and which had an odor reminiscent of butyric acid but not so strong, was obtained. The silver salt of this acid was made by adding silver nitrate to a solution of the acid which had been neutralized with ammonium hydroxide.

Found, 46.1% Ag. Theory for silver caproate, 45.9% Ag. All of the acid, which was undoubtedly one of the hexoic acids, was separated from the remaining portions of the oxidation mixture as the silver salt. The acid was then reliberated through the boiling with Na_2CO_3, followed by acidification. The acid tends to form an emulsion with water, which was very difficult to separate. One gram of dry acid was finally obtained. It did not solidify at −17° C. The b. p. was 189° C. (cor.), using the equalized vapor-tension method.

Outside of this hexoic acid and a large amount of carbon dioxide, which was evolved when the oxidation mixture was acidulated, no other products of oxidation could be isolated.

Hydrogenation, Using Palladium.—Attempts at hydrogenation, using Adams' method for the preparation of the catalyst, were unsuccessful both at atmospheric and 30 lbs. pressure. By using Pahl's palladium, hydrogen was readily introduced into the compound at room temperature. The mixture for hydrogenation consisted of 20.0 grams of oil, b. p. 257–260° C., 20 cc. alcohol, 1.0+ gram of Pahl's palladium and 50 cc. of water. Four liters of hydrogen (washed with alkaline pyrogallol and conc. H_2SO_4) were absorbed, one liter the first hour, and the remaining three liters in eight hours. The reaction mixture was poured into water, and repeatedly extracted with ether. The ether was evaporated, the residual oil placed in a separatory funnel and washed twice with water, shaken up three times with conc. H_2SO_4, and finally washed successively with water, dilute ammonia and water, and dried over $CaCl_2$. (The sulphuric acid used in washing the oil becomes dark brown in color.) The oil so obtained is colorless and odorless. It solidifies readily in an ice-bath. M. p. 8.2° C.; $d\,\frac{15°}{4°} = 0.7727$; $d\,\frac{24°}{4°} = 0.7681$; $n_{25°} = 1.4323$. A combustion for carbon and hydrogen was made.

Found, 84.3% C and 15.5% H.

Theory for $C_{15}H_{32}$ is 84.8% C and 15.2% H, b. p. 259–262° C. (uncor.). There was a slight decomposition during boiling, the distillate being yellow and having acquired a pungent odor. By washing with conc. H_2SO_4 the distillate lost its yellow color, also its odor. This indicates that distillation should be carried on at reduced pressure and undoubtedly also applies to the original Echinacea oil.

Dehydrogenation with Sulphur.—Forty grams of oil (b. p. 252–257° C.) were heated with 25 grams sulphur, in a round-bottom flask fitted with condenser. The reaction began at about 210° C., with evolution of gas. In two hours the sulphur layer had disappeared. The brown liquid residue was distilled, the following cuts being made: 5 cc. below 292° C., and 20 cc. at 292–305° C. (uncor.). There remained a tar. To remove sulphur compounds the fractions were treated with alcoholic mercuric chloride, white precipitates forming. The latter were filtered off. The oil remaining in the alcohol solution was separated out by the addition of water. It was dried over K_2CO_3 and redistilled. Two fractions, 204–290° C. and 290–300° C., were cut. They still contained some sulphur compounds. Neither fraction yielded a picrate, either immediately from a saturated alcoholic solution or upon standing. On evaporation pure picric acid (m. p. 122° C.) was obtained. The cadalene and eudalene of Rusicka (*Helv. Chim. Acta*, 5, 344, 1922) were therefore absent.

Miscellaneous Tests and Reactions.—The fraction (b. p. 252–257° C.) was used. Addition of chromyl chloride results in an explosion of great violence. Conc. H_2SO_4 dissolves the oil at 0° C., a brown color resulting. The product is a liquid. Nitrosyl chloride failed to give a solid product. Glacial acetic acid containing a little conc. H_2SO_4 also failed to give a solid product. Dry hydrobromic acid in glacial acetic acid reacted with the hydrocarbon to some extent, but it was not found possible to saturate it completely, as some bromine was still absorbed after the hydrobromic acid treatment.

Summary.—This preliminary investigation of the volatile oil of *Echinacea*

angustifolia roots is to be followed by further studies on a larger amount of material kindly supplied by Professor Lloyd.

The chief constituent of the oil appears to be a tetrahydrosesquiterpene with two double bonds, hence a chain hydrocarbon, which, however, is not straight chained.

By catalytic hydrogenation a new pentadecane, which also, of necessity, is not a straight chain hydrocarbon, has been obtained.

A preliminary suggestion as to the possible structure of the tetrahydrosesquiterpene under consideration may be found in the formula:

$$C_5H_{11}CH:CHCH_2CH:CH\ C_5H_{11}$$

in which the pentyl radicles are of an iso character. Thus far, however, there is nothing to show that the molecule is as symmetric as the formula would indicate.

PRESERVATIVE EFFECT OF CERTAIN SUBSTANCES UPON CARREL-DAKIN SOLUTION.*

BY JOSEPH W. E. HARRISSON.

Much has been written about the preparation and manufacture of Carrel-Dakin Solution and the number of ways of obtaining a suitable product is legion. A general review in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION (Vol. 13, Nos. 1, 2, 3, 4) is undoubtedly the best available discussion on the history, manufacture and preserving of Dakin's Solution.

It occurred to the writer after reviewing the literature that some substance might be found that would not disturb the reaction of the solution and yet would stabilize the available chlorine. The addition of 0.5 per cent. of borax or 0.5 to 1.0 per cent. of sodium carbonate has been suggested (*Jour. Biol. Chem.*, 1919) and also the addition of sodium chloride (*Bulletin* Cincinnati General Hospital).

As to the stability of a 0.5 per cent. available chlorine solution we find according to Johannesen (*Arch. Pharm. Chem.*, 27) such a solution when kept at 0° C. in amber bottles will deteriorate over a period of 8 weeks at a loss of 0.006 per cent. chlorine per week, and when kept at 18° C. a loss of 0.011 per cent. chlorine per week.

According to an investigator in the department of pathology of the University of Edinburgh a 2.92 per cent. available chlorine solution kept in clear glass bottles assayed 2.62 per cent. available chlorine after a period of two years.

Borax, sodium bicarbonate, sodium chloride, benzosulphinide and acetanilide were selected as substances which might have a preservative effect upon Dakin's Solution. The Dakin Solution was made according to the Daufresne formula and also according to the disodium phosphate formula suggested by E. F. Kelly for inclusion in the Tenth Revision of the United States Pharmacopœia.

Daufresne Formula.		*Kelly Formula.*	
CaOCl	70.8 Gm.	CaOCl	40.0 Gm.
Na_2CO_3	36.8 Gm.	Na_2HPO_4	40.0 Gm.
$NaHCO_3$	30.4 Gm.	Water	
Water		To make	1000 cc.
To make	2000 cc.		

The technic of manufacture being the usual procedure in both.

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*Section on Practical Pharmacy and Dispensing, A. Ph. A., Buffalo meeting, 1924.

Adjustment of alkalinity of the Daufresne formula was made with sodium bicarbonate of alkalinity to alcoholic phenolphthalein but not to powdered phenolphthalein. No adjustment was made on the Kelly formula, it supposedly being of the proper alkalinity. Sufficient of each solution was made so that 100 cc. of each of the following solutions could be made and placed in both clear glass and amber glass bottles—cork-stoppered bottles were used.

No. 1	100 cc. Daufresne	Clear glass and amber glass	Plain
No. 2	100 cc. Daufresne	Clear glass and amber glass	1 per cent. Borax
No. 3	100 cc. Daufresne	Clear glass and amber glass	1 per cent. Sodium Bicarbonate
No. 4	100 cc. Daufresne	Clear glass and amber glass	2 per cent. Sodium Chloride
No. 5	100 cc. Daufresne	Clear glass and amber glass	5 per cent. Sodium Chloride
No. 6	100 cc. Daufresne	Clear glass and amber glass	0.25 per cent. Benzosulphinide

The same outline was followed using the Kelly formula.

The bottled solutions were made July 3, 1923, and placed in the laboratory without any particular attention being paid as to their location or temperature. They were not, however, where the rays of the sun would strike them. They were analyzed for their available chlorine content at various intervals, using the method of the U. S. P. IX for assaying Solution of Chlorinated Soda, except that the available chlorine is reported weight in volume.

Assays of the solution over a period of one year are tabulated below:

CLEAR GLASS BOTTLES.

Kelly Formula.

	1923.					1924.	Loss over	Per cent.
	7/3.	7/6.	7/24.	8/21.	9/2.	7/18.	one yr.	loss.
Plain	0.781	0.681	0.508	0.398	0.396	0.068	0.713	91.2
1 p. c. Borax	0.798	0.578	0.269	0.205	0.193	0.025	0.773	96.8
1 p. c. Sod. Bicarb.	0.749	0.596	0.287	0.220	0.220	0.025	0.724	96.6
2 p. c. Sod. Chlor.	0.773	0.683	0.589	0.589	0.463	0.153	0.620	80.2
5 p. c. Sod. Chlor.	0.808	0.766	0.676	0.676	0.543	0.196	0.612	75.7
0.25 p. c. Saccharin	0.808	0.701	0.570	0.570	0.438	0.076	0.732	90.5

Daufresne Formula.

	1923.				1924.	Loss over	Per cent.
	7/6.	7/29.	8/22.	9/1.	7/18.	one year.	loss.
Plain	0.454	0.331	0.226	0.180	0.008	0.446	98.2
1 p. c. Borax	0.454	0.331	0.213	0.174	0.050	0.404	88.9
1 p. c. Sod. Bicarb.	0.450	0.300	0.177	0.146	0.042	0.408	90.6
2 p. c. Sod. Chlor.	0.450	0.283	0.226	0.180	0.068	0.392	87.1
5 p. c. Sod. Chlor.	0.450	0.331	0.226	0.191	0.119	0.331	73.5
0.25 p. c. Saccharin	0.356	0.138	0.075	0.042	0.016	0.340	95.7

AMBER BOTTLES.

Kelly Formula.

	1923.				1924.	Loss over	Per cent.
	7/6.	7/24.	8/21.	9/1.	7/18.	one year.	loss.
Plain	0.739	0.739	0.739	0.739	0.715	0.014	1.8
1 p. c. Borax	0.726	0.726	0.726	0.726	0.678	0.048	6.6
1 p. c. Sod. Bicarb.	0.726	0.688	0.658	0.639	0.485	0.241	32.8
2 p. c. Sod. Chlor.	0.733	0.733	0.733	0.733	0.733	None	None
5 p. c. Sod. Chlor.	0.798	0.798	0.798	0.798	0.798	None	None
0.25 p. c. Saccharin	0.739	0.739	0.739	0.739	0.739	None	None

Daufresne Formula.

	1923. 7/6.	7/29.	8/20.	9/1.	1924. 7/18.	Loss over one year.	Per cent. loss.
Plain	0.501	0.494	0.494	0.477	0.443	0.068	13.5
1 p. c. Borax	0.501	0.494	0.489	0.471	0.391	0.110	21.9
1 p. c. Sod. Bicarb.	0.495	0.470	0.450	0.450	0.306	0.189	38.1
2 p. c. Sod. Chlor.	0.501	0.488	0.488	0.482	0.408	0.093	18.5
5 p. c. Sod. Chlor.	0.490	0.475	0.470	0.463	0.366	0.124	15.5
0.25 p. c. Saccharin	0.381	0.239	0.227	0.219	0.195	0.186	48.8

It will be noticed that the loss of available chlorine in the clear glass bottles is very nearly parallel in the two different types of Dakin's Solution, the solution containing five per cent. sodium chloride showing the greater amount of available chlorine after a period of one year; the maximum loss being 96.8 per cent. and the minimum 73.5. None of the solutions kept in the clear glass bottles are sufficiently stable to suggest any possibility of using a preservative, in this type of container.

The solutions stored in amber bottles showed different keeping qualities, and that made by the formula as suggested by Kelly was stable in three instances whereas that manufactured according to Daufresne lost 13.5 per cent. of its available chlorine in its most stable solution.

The appearance of the different solutions after standing a period of one year was different and in a general way they can be tabulated as follows:

	White. Kelly.	Daufresne.	Amber. Kelly.	Daufresne.
Plain	1	−1	1	2
1 per cent. Borax	2	−3	−3	−2
1 per cent. Sodium Bicarbonate	2	1	−3	−1
2 per cent Sodium Chloride	3	Purple	1	−1
5 per cent. Sodium Chloride	4	3	3	−1
0.25 per cent. Saccharin	+4	3	1	−1

Key: 1—White sediment; 2—Clear; 3—Crystalline sediment; 4—Brown sediment.

It would seem, therefore, according to the foregoing facts, that for all practical purposes the solution made according to the Kelly formula can be expected to be stable for a period of at least three months if kept in amber bottles. The addition of two per cent. sodium chloride or twenty-five hundredths of one per cent. of benzosulphinide would undoubtedly stabilize the Kelly formula indefinitely and could be added without any harmful therapeutic effects.

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SULPHUR IN THE UNITED STATES.

W. T. Lundy of Freeport, Texas, gives the total value of sulphur shipped from the United States at $25,000,000 for 1923. "The essential factors," he states, "which govern the prosperity of the sulphur industry in the United States are: That new uses be found which will gradually increase domestic consumption and foreign shipments to the approximate equivalent of the present large production; that the important items of fuel oil cost and supplies be maintained under the present favorable conditions; and also that methods and principles of taxation, both state and federal, be made equitable, and so applied to the sulphur industry that economical methods of production will in no way be adversely influenced or limited."

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SHOULD OUR DEFINITION FOR SUGAR BE BROADENED—IF SO, WHY?*

BY L. E. SAYRE.

If, as Horatio C. Wood says, for more than ten centuries sugar remained a curiosity and was used only as a medicine, any definition that has any harking back to that time would certainly need furbishing up in this the twentieth century. Merely physical, eye-discerned attributes of the substance necessarily made up a part of any description, while taste and utility certainly entered into any early description of sugar. Evidently, in the lapse of time, there has been ample opportunity for a broadening of the definition and uses of sugar.

Scientific broadening is a self-progressing every-day occurrence; when the occasion arises and necessity of recognition dictates, new incontrovertible facts are welcomed and applied by every worker practically there and then. It is not necessary to hold a meeting and resolve, for if it were well done it would have to be done quickly.

In popular broadening, the task is harder. The adage that you can't teach old dogs new tricks applies to the weaning and diverting of the opinions of the masses. The hardest thing to do, perhaps, is to let them know that there is more than

* Section on Practical Pharmacy and Dispensing, A. Ph. A., Buffalo meeting, 1924.

one sugar; for the most part they will assert that they "know better." The man from Erin, who, when informed that there was a vast difference in the quality of whisky, opined that there might be different kinds but that there wasn't any *bad* whisky, would not be so tractable in the matter of sugar. He would acknowledge it in all its varying physical forms, but you could not persuade him that a powdered solid glucose was a sugar—to him it would be a "fake" and a "holdup." A certain amount of education must accompany the effort of introducing other sugars with a less intensive sweet taste. It would do little good to endeavor to try to make him understand that sucrosum would have to become dextrosum before it would do his body any good—that his animal economy must invert that sweet sugar from mere sweet taste to a less sweet practical nourishment as a food substance.

Definitions are dangerous things—they have to be watched. One-man-power definitions especially. Very rarely is a single individual competent to assume such dictatorial authority or to be invested with such a power. It is from the counsel of many that standards should be derived. It is in that light that this query is launched. The writer has had to deal with sugar from a more or less public standpoint quite recently and the practicability of a broadening was impressed upon him as having to come from the discussers of the scientific side of the question. It must be the fruitage of reason, not sentiment. In the course of half a century the products to be considered have changed; their sources, even, in some cases. The chemistry involved has advanced from questionable surmises to firm grounds of demonstrable correctness. The pharmaceutical side of the thesis will have its weight in final decisions. While there should be no breaking down of barriers of safety—the discoveries and results of modern factories in producing new and perhaps cheaper sugars should be welcomed and respected. If old definitions are insufficient, unjust, or trammeling, surely we are able to correct any well-intended mistakes of the past which new light may point out. But there must be no partisanship or interest allowed to warp judgment. If commerce offers new products which require new definitions or the revising of old ones, let us accept the new things and remove old obstacles.

Corn sugar as applied to mean the final product derived from the starch of the seed from the cob of the Indian corn—field corn—maize, is entirely different from the idea of corn sugar as originally produced and described and named in the patent records of 1841.

A loose handling of the term corn sugar in 1924, which would invite the partisan of an interested side *not* to protest, might indicate that the loose description was a sort of acceptable propaganda, or at least a temporizing with a difficulty that must be surmounted in a final agreement concerning the verbiage of an official definition.

Corn sugar in 1841 meant the sugar obtained from expressed field cornstalk juice. The juice when concentrated yielded a granular sugar and a molasses in the same way as sugar cane does. The government document of the time refers to the product as being equal to that of cane and beets, while in quantity produced it was "three times as great as in beets."

If the definition for sugar as given out by the United States Department of Agriculture from its Secretary's office is a peremptory finality the wonder grows

why it was with forethought applied to a product *known as something else.* With no change whatever, without taking out a word, let us read as it might preferentially be read to secure its best application.

The reading of the circular is as follows:

"Sugar is the product chemically known as sucrose (saccharose) chiefly obtained from sugar cane, sugar beets, sorghum, maple and palm."

Now, commence with the third word of the descriptive paragraph, accepting the full significance of the words "known as" and see what can be made of it: "The product chemically known as sucrose (saccharose) chiefly obtained from sugar cane, sugar beets, sorghum, maple and palm, is sugar."

If a product is chemically known and identifiable as sucrose its main name must be sucrose and sugar its inducted commonplace synonym; no chemically bestowed knighthood is necessary to make it sugar.

If sucrose is sugar, is not lactose also sugar? And dextrose and maltose? And inosite the regal sugar that biologists are paying large prices for? Applying the same train of thought, does not glucose carry a varying lot of nameable sugars? Really and truly ought the title sugar be limited in application to any one of many chemically known products from natural sources?

It is asserted by those most interested that the U. S. Department of Agriculture in the defining of sugar, with an imperial gesture, waves aside all bodies other than sucrose. It is maintained by those objecting to the impassable barrier of exclusion thus raised that the term *Sugar* should not be an excluding title but an embracing receptive one.

That "sugars" should be valued and described under their definite chemical subtitles when possible and each have its definition.

That the word "sugar" should not be held as describing a single omnipotent body, but a class in which all saccharine-like substances would find their niche.

The quality of sweet-tasting carbohydrates alone would give to other bodies than those obtained from the juices of *saccharum officinarum* and *betae* places under a collective title of "Sugar."

The World War had much influence in the creation of standards and an appreciation for rational obtainable substitutes (in the form of self-applied restrictions) of cane sugar. A dozen years ago a great many families made their own table syrups from granulated sugars and flavors; an intense sweet was the desire—the maple syrup of the market, for instance, was usually a half strength masquerader. The housewife could juggle with an artificial maple flavor and make more satisfying syrups. When limitation was imposed on cane and beet sugar, the manufacturers' dextrose and sorghum compounds were put into use. The public palate permitted itself to be let down an octave or so in a sugar inversion scale and strange as it may seem that familiarity with the "less sweet" things has become a part of the domestic economy of to-day. The manufacture of the syrups from maize starches and malt-made sugars is greater than ever before. There is certainly a desirable trend to the consumption of dextrose syrup and sugars. People are rejecting the cloying over-sweetness of the once highly esteemed cane-sugar-made delicacies of the breakfast table much to the benefit of their kidneys and their stomachs. In this one direction it is evident that the definition for sugar might be broadened without much protest.

The coming Pharmacopœia is to have some slight changes in the nomenclature of the various sugars. The broadening of a definition of sugar is a possibility if the term "sugar" is to be thought of as a class name and the chemical bodies, saccharoses, varying in sweetness, composition and properties as members of the class. The pharmaceutical use of sugars may involve the use of a selected body or the blending of several. Greater freedom in expression and practical use is desired. The term "saccharated" even in old practice meant nothing very definite. Saccharated carbonate of iron utilized cane sugar, but saccharated pepsin did not—in these it was not a matter of taste; it was preservation-insurance that was invoked. Saccharate of lime used cane sugar as a chemical and furnished lime in a new assimilable form not attainable in the usual calcium salts. Dover's powder required milk sugar largely as an inert vehicle for dose subdivision; and, it must not be forgotten, cane sugar has been used in Dover's powder as an assisting abrader, perhaps, of store-powdered opium in the same way that saltpeter was used for the purpose in still earlier days. Sugar then meant not "a" fixed type sugar but "the" special sugar needed. The broadening has been, ferment-like, affecting the Pharmacopœias as they succeeded each other. The new Pharmacopœia X may embrace in its index lactosum, sucrosum, dextrosum; perhaps when a masking intensity of sweet taste is wanted a sugar will not be employed at all, while, likely, the chemical benzosulphinidum, synonymized suggestively as "saccharin," will be employed, even if it has no food value whatever and is perhaps detrimental to the healthy organism when used in place of edible sugars. The trifling amount of saccharin necessary in a given dose of a medicine is negligible and the partaker of a saccharinated castor oil may smack his lips and safely survive its administration.

It may be added, finally, that among the supersweet sugars there is one, recently announced, composed of the common elements of foods. This compound, we are told, by *Daily News Service News Bulletin* (Washington, D. C.), has a marvelous sweetening power (one part equals in sweetness about 2000 parts of common sugar). It is chemically rejoicing in an almost unpronounceable name which, it is hoped, organic chemists will endeavor to shorten and make fully as intelligible.

INSECTS AND MEDICINE.

An exhibit of insects having a relation to medicine and diseases, in the zoölogical department of the Vienna Museum of Natural History, comprises about 6000 specimens. Concise explanations are given of the specimens and photographic enlargements accompany the organisms, invisible to the eye. The exhibit is divided into six groups and shows which of these organisms exerts a disease-producing action on human beings or animals (1) by means of the secretions of its glands, (2) by means of hairs, (3) by poisonous appendages, (4) by sucking the blood, (5) by parasitism, or (6) by transmitting disease germs.

Incidentally, an industrial use for oil from locusts is for airplanes—the oil retaining its fluidity at very high altitude.

A PALATABLE COD LIVER OIL CONCENTRATE.

Harry E. Dubin, in a paper before the Scientific Section, A. Ph. A., Buffalo, reported on a concentrate from cod liver oil, free from oil, practically odorless and tasteless, of which 0.1 Gm., if mixed with 1000 grams of sugar, represents the therapeutic value of 1000 grams of cod liver oil from which it is obtained—almost 700 animal experiments have been carried out to prove the worth of this cod liver oil concentrate; clinical experiments have been made.

PERFUMES AND AROMATIC CHEMICALS.

BY ROBERT GLENK.*

Investigations and experiments, dealing with aromatic plant materials available in the South which might lend themselves to various industrial uses, and extending over a period of years, have resulted in bringing together much interesting data in this most fascinating field of chemistry.

The work grew out of a desire to secure materials for the exhibit to illustrate the perfume industry, the relative importance of which will be appreciated when it is realized that in twenty-five years it has grown from a business of four millions in annual production to one of nearly one hundred and fifty millions last year.

Human interest in sweet scents and the fragrant odor of flowers is as universal as the love of ornamentation and of the beautiful in art and nature. Both ancient and modern literature teems with allusions to the use of perfumes both as an auxiliary to the mystic rites of religious worship and as a means of enhancing one's personal charms.

The extent of the use of perfumes and spices of a nation was an index of the stage of advancement and refinement of that nation, the most enlightened being always distinguished for highest appreciation of sweet odors. Under the luxurious Greek and Roman civilization, the use of scented waters and oils became a fine art, and a treatise on the use and preparation of perfumes by Rhodius Appolonius gave a clue to the range of the fragrant raw materials employed two thousand years ago, many of which are standard products to-day.

The lure of perfumes is also intimately associated with the incentive for cultural development that delights in and elevates the fine arts, namely, painting, sculpture, poetry, drama and music, and imparts that "esthetic sense of mind and spirit that lifts humanity in the scale of progress." At the present day, the fascination for perfumes and cosmetics has taken such a hold that the nation spends as much on "Aids to Beauty" as it does on education. But we are still behind some of the ancient nations whose extravagance in the use of perfumes led the rich to literally drench themselves from head to foot with scented oils.

Like all other human faculties, the sense of smell is capable of cultivation and enhancement and connoisseurs in essential oils, wines, tea and coffee have their powers trained often to a wonderful degree in their special lines. The skilled perfumer is also capable of making nice discriminations in the recognition and in the blending of odors to produce the artistic results so much admired in the standard French and American perfumes.

As to the physical properties of smell, aside from the fact that the stimulus is always in gaseous form, very little is known. Volatile particles are carried by the act of inspiration into the nostrils where they react on cells found in the mucus membrane giving nerve impulses which are conveyed by the olfactory nerves to the temporal lobes of the brain and there registered in our intelligence. Solubility and volatility are therefore necessary accompaniments of odorous substances, but Backman states that the volatile substances must be soluble in water and in the lipins before they can reach the receptor organs of smell. Undoubtedly, the chemical constitution of an organic substance has much to do with the nature and quantity

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of its odor. The particular organic groups associated with odors have been called aromatophors, as mophors or odoriphors by different investigators.

The odor and aroma of flowers and fruits is generally due to what is termed an essential oil, and these oils are almost without exception very complex compounds or mixtures. The separation and identification of many ingredients of this odor complex is most difficult on account of their sensitiveness to heat and chemical reagents. Many constituents, on the other hand, are so powerful in odor that though an infinitesimal quantity be present, yet it is sufficient to modify the whole combination and give distinction to the floral bouquet.

The extraction of the various flower odors is accomplished in various ways, either by distillation or absorption, depending on the nature of the essential oil present or, in the case of the citrus fruit oils, in a mechanical way by expression. Steam distillation is resorted to when the oil exists in sufficient quantity and is not materially injured by heat or oxidation as in the manufacture of lavender or orange blossom oils. In the case of orange or lemon peel, the distillation process is unsuccessful, the terpenes only coming over. Extraction by volatile solvents, such as petroleum ether, is used when the floral odor exists only in infinitesimal quantities as in violets, jasmin, tuberose, etc.; the volatile solvent method extracts along with the volatile oil, the flower waxes and inert constituents producing the commercial concretes. If these inert substances are removed by further treatment with alcohol still more concentrated products result, commercially sold under the name of hyper-essences, absolutes, etc. These are naturally very costly products.

Another process for obtaining the odor constituents of flowers is called "enfleurage" or absorption with highly purified lard in the cold or by maceration with warm fat. The fat is afterwards washed with alcohol to remove the perfume. The enfleurage essences were for many years the only important perfume materials available in the manufacture of handkerchief extracts.

The flowers which are of primary importance in the manufacture of natural perfumery products of commerce are roses, carnations, mignonette, violets, jasmin, orange blossoms, tuberoses, hyacinths, cassie, heliotrope, mimosa and lavender. These flowers have been grown by the thrifty French gardners and farmers for centuries. They flourish equally well with us and with proper care and selection could be grown to produce natural perfume material abundantly in the South. Skilled workers, however, are necessary in processing the flowers to advantage and in this respect the Grasse District of France is preëminent.

The variability in both quality and cost of perfumery products from natural sources has stimulated the chemists to search for substitute perfume materials which would either replace or augment natural perfumes. Years have been spent in the painstaking study of the constituents of a single flower odor and many of the substances isolated and identified. However, on mixing these substances in the proportions as determined in the laboratory, the odor is not exactly duplicated. Artificial odor substances are not entirely substitutes as yet for natural flower products. The synthetics contribute to their strengthening and have also made it possible to reproduce flower odors not obtainable from the plants themselves like arbutus, sweetpeas, honeysuckle and magnolia. Synthetics likewise make it possible to obtain results more quickly and accurately, besides supplying an infinitely greater variety of substances to choose from in producing new and striking bouquet effects

and in greater concentration. Also, more uniformity in character, quality and odor value is to be attained and they are not subject to the price fluctuations as is the case with natural products grown under varying climatic conditions.

As a great many of the newer synthetic perfume materials are derived from essential oils occurring in plants, it becomes necessary to include these indispensable chemicals in dealing with perfumery products. Thus, the field of inquiry is enormously widened, and becomes well nigh inexhaustible. While the synthetic perfume industry is of much less commercial importance than the aniline dye industry, and of a much later development, it is of great scientific interest, nevertheless. When a new substance is discovered, it requires a chemist trained to the valuation of odors to recognize its worth as a perfume product, as its odor is seldom appreciated unless in a highly purified and much diluted condition. The dye color, on the other hand, is at once visible and recognizable.

In buying natural perfumery materials, experts agree that chemical analysis does not suffice in determining the quality, as flavor and odor value are the characters sought after and not chemical percentages or physical constants. Perfumers have always resorted to the olfactory examination of their essential oils and perfume materials to determine their worth as compounding ingredients. In the olfactory method of examination, the universal custom has been to smell attentively a strip of paper previously dipped into the liquid to be tested. Of late years an instrument, called an evapolfactometer has been invented by a French chemist, Dr. Oddo, which replaces the smelling paper. This instrument does not give to every one, even a skilled analyst, the requisite capacity for detecting the various components of a perfumery product, but it does make their study much easier. The instrument is based upon the following principle:

The vapor tensions or shades of evaporation of odor substances are in most cases distinct and individual and so by heating very slightly and gradually a blend or perfume, the various components evaporate one after the other according to their differing volatilizing powers. Thus a sort of fractionation takes place which has to be made as slowly as possible in order to give sufficient time for the analyst to perceive and recognize the perfumed vapors which are successively evaporating.

In practice, this study of a perfume has to be made in several stages as the sense of smell is subject to more or less rapid fatigue. On beginning the examination, the fraction evaporating up to 30° Centigrade is studied for about 10 minutes. In half an hour the instrument is dipped again and when the temperature reaches 30°, another 10 minutes' study is made up to 40° Centigrade and so on up the entire scale until all the odor is gone. The rise in temperature is produced by an electric current elevating the temperature of a heating unit inside the silver reservoir. In the hands of one who is familiar with natural and synthetic perfume materials, this instrument is very useful and is constantly employed.

The rôle of the perfumer of the past appears comparatively simple in comparison with the art of the perfumer of to-day. Then, only the essential oils, balsams and other odorous products furnished by nature herself were used for perfume compositions. The bases were, therefore, finished perfumes already in existence and it was only necessary to skilfully proportion the compounds so as to obtain harmonious notes. The compositions too were often far from being accurate flower reproductions.

The task of the modern perfume chemist is much more complex, as he has a

wealth of basic odor material to choose from and work with. In fact, it is to this *very complexity* that we owe the impressive progress made in the perfume industry to-day. Many artificial perfumes are wonderfully like the plant originals. Perfumers' efforts are akin to those of the artist. The painter reproduces the flower to the eye while the chemist imitates and preserves the fleeting fragrance of the blossom and combines its charms into a delightful bouquet. Numerous artistic combinations of colors and shades are possible in making up a bouquet of wild flowers; just so it is with the composition of the odor bouquet of these flowers. The perfumer must have an artistic sense to secure complete odor harmony in blending the combination, to obtain original effects.

We have only to think of what harmony means in music to understand what the expression is intended to convey when it is applied to odor. It consists, in music, of the unity, concentration, similarity and agreement of tones so as to produce beautiful effects, sometimes soothing, sometimes exhilarating, always fresh and various, and in perfumes a form of temperamental expression of one's personality, as it were.

In order to produce a finished perfume giving the effect of unified and blended odor it is necessary to closely imitate nature. Each of the ingredients used should act to some extent as a fixative for the other ingredients of volatility nearest its own or by the use of substances of intermediate volatility and appropriate odor values.

Owing to the limited significance of odors in our intellectual life, no outstanding scientific work has been done pertaining to the rational classification of odors as in the case of the spectrum for colors and as yet there is no clear basis for accurate comparison of different smells. Rimmel gives a list of related odor types which perfumers recognize as being sufficiently distinctive and this classification is followed in discussing the various perfume materials which we have for consideration. These odor types or related odors are: rose, jasmine, neroli, tuberose, violet, heliotrope, hawthorn, lavender, trefle, mint, vetivert, lemon, vanilla, pine, and animal odors. Nearly all odor substances used in the perfume industry fall within these odor types and they are distinctive enough for practical purposes.

THE ROSE TYPE.

Our available natural products coming under this classification are the Cherokee and the cultivated roses; rose geranium, palma rosa grass and citronella grass. These grasses are the source of Turkish geranium and citronella oil and are produced in large quantity in Oriental countries. The price at which these oils are sold on the market is so low that there is not any likelihood of successful competition even though the grasses flourish in the South.

Rose Geranium. The oils obtained from geranium grown experimentally at Orlando, Florida, were submitted to trade experts and were reported as being equal in odor value to many foreign oils and even surpassing some. Their physical constants were found to fall within the prescribed limits and rhodinol made from these oils was stated to be as fine as any made from foreign oils. The ester content (mainly geranyl tiglinate) was 25 to 28%.

In view of the results thus far obtained by the Bureau of Plant Industry, it is believed that rose geranium can be advantageously grown in the warmer sections of the U. S. and trial plantings are being made in Southern California with the object of establishing the crop on a commercial basis for oil production.

Citronella, palma rosa and geranium oils furnish the terpene alcohols—geraniol and citronellol of commerce, enormous quantities of which are used in scenting cosmetics, soaps and perfumery. They are also used for the manufacture of esters which are highly important perfume constituents. Geraniol and citronellol are constituents of the natural otto of rose and form the bulk of the synthetic rose oils in commerce.

The Cherokee rose fragrance is of the lily rose type, its odor being modified by the aldehyde hydroxy citronellal. The flowers are not sufficiently powerful in odor to warrant any use being made of them commercially. The perfume can be very easily imitated to perfection and at a much less cost than the natural odor could be extracted from the flowers.

The steam-distilled otto of roses does not represent the rose odor nearly as well as the concretes and absolutes produced by volatile solvents from the fact that the phenyl ethyl alcohol which constitutes 50% of the rose absolutes goes into solution in the rose water produced in the distillation of the oil. Otto of roses is so skilfully adulterated that it is said, on good authority, to be impossible of detection either chemically or physically and no pure otto is obtainable at the present time. The constituents are very well known and synthetic oils very largely replace the natural product in the manufacture of perfumes.

For the purposes of comparison diagrammatic formulas are presented showing the varying composition of the primary base of the jack rose, white rose and Cherokee rose artificial perfumes. To make the finished essences it is necessary to round off this basic odor with natural perfume products and appropriate fixatives and to allow the composition time to age.

In the manufacture of perfumes, it is essential that only the finest grade of denatured grain alcohol be employed. Diethyl phthalate is the denaturing substance used in Formulas 39*c* in the proportion of $2^1/_2\%$. Brucine and isopropyl alcohol are also permissible denaturants for perfumers' alcohol. These substances are quite odorless.

Among the important chemical products which simulate the rose odor may be mentioned diphenyl methane, diphenyl oxide, phenyl propyl alcohol, phenyl ethyl propionate, phenyl ethyl phenyl acetate, phenyl acetic acid and decylic acetate.

THE JASMIN BLOSSOM TYPE.

The fragrance of the lilac, lily, magnolia, yellow jessamine, cyclamen and azedarach naturally come within this classification and have benzyl acetate, terpineol, and hydrox citronellal as dominating constituents. Diagrammatic formulas for the primary base of lilac, jasmin and madonna lily are given for comparison.

The perfume of the jasmin blossoms is obtained either by enfleurage or by volatile solvents, and pomades; absolutes and hyperessences are offered. The price of the absolutes fluctuates very greatly, varying with the condition of the harvest which occurs from July to October and depending upon the climate and locality.

Natural jasmin is largely utilized in the manufacture of perfumes to which it imparts fresh flower effects. It is, however, largely replaced by synthetic flower oils as the price of the floral absolute is between seven and eight hundred dollars per pound, and can only be used in the highest priced perfumes. The chief odor constituents of the natural oil are: benzylacetate, linalol, linalyl acetate, indol and methyl anthranilate. To these are added such flowery adjuvants as methyl nonyl acetaldehyde, phenyl ethylalcohol, benzyl alcohol, geranyl acetate, phenyl ethylacetate, styrolyl alcohol, etc., and as fixatives: octylic and decylic acetate and farnesol. The jasmin flower is employed by the Hindus in their religious rites and is known as Kudda Mulla. In China the flowers are used for scenting tea.

Lilac is one of the ornamental shrubs of the gardens and grown almost anywhere. It produces a profusion of vari-colored flowers in dense clusters in early spring, which are very fragrant. The natural odor has not been satisfactorily extracted but its synthetic counter part has been prepared very perfectly with terpineol as the base and jasmin natural to strike the flowery note. The blossoms of the umbrella or china berry tree have an odor resembling that of the lilac.

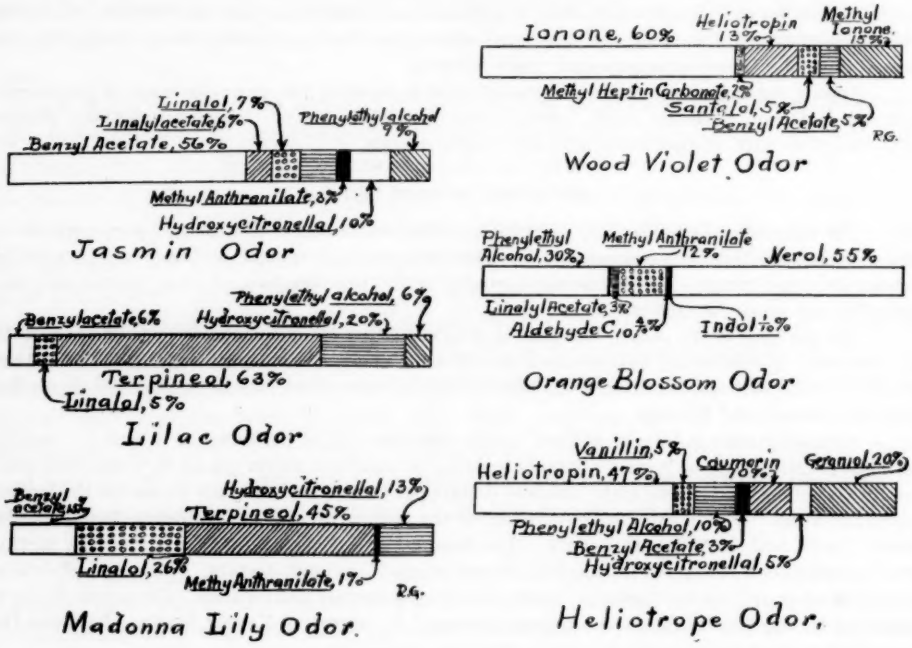
The madonna lily is one of the most delightful of the flowering plants for this section and produces an abundance of highly fragrant blossoms all summer. It is unlikely that it will ever become of importance as a perfume-yielding crop, as the odor is readily and perfectly imitated with synthetics.

The magnolia blossom is interesting in that it has been named the state flower of Louisiana and and Mississippi by acts of the respective legislatures of Louisiana and Mississippi. It is the largest, showiest flower of all the forest trees and has a peculiar fragrance in which the odor of borneol is prominent. The swamp magnolia shrub of the eastern states, however, bears blossoms which have a very fine odor, suggestive of lily and rose. No commercial use is made of the flowers and the magnolia perfume is always compounded of other flower oils and synthetics in which jasmin and

rose predominate. Ethyl acetate is one of the constituents of our sweet shrub or *magnolia fuscata* blossoms.

Lily of the Valley. On account of its exquisite fragrance this is one of the most popular flowers cultivated for bouquets by florists. It is a native of Europe and is known by the name of Muguet. The natural perfume is extracted by petroleum ether and comes on the market in the form of concrete and absolute. The synthetic flower oil is composed of a base of hydroxycitronellal, with linalol, terpineol, nerol, and methyl acetophenone and the flowery note brought out by jasmine natural. The imitation is a very accurate facsimile of the natural floral fragrance.

Carnation. The carnation or pink has been a favorite flower for centuries and through cultivation and selection has been bred up to yield a delightfully fragrant odor of a spicy nature. Theophrastus, 4th century B. C., stated that the carnation is without smell; fifty or more species are known many of which possess no smell, others are quite odorous. The odor base of the pink is isoeugenol modified by esters of eugenol and isoeugenol, nerol, heliotropin, terpineol and hydroxycitronellal, and the flowery note is brought out by Ylang oil. The natural flower products are pomade extracts and occasionally concretes, but these are high priced and scarce.



ORANGE BLOSSOM ODOR.

The orange is a native of India and China, but it was introduced into Europe more than 600 years ago and has been cultivated for a long time. The golden apples of Hesperides are supposed to have been the fruit of the orange tree. The fragrant oil obtained from the blossoms received the name of nerol from the fact that the wife of the Prince of Neroli used the essence for scenting gloves. In southern France, the tree is cultivated almost entirely for its flowers which yield their fragrance by either distillation with steam, or absorption by means of volatile solvents. Both the sweet and bitter orange flowers are used but the bitter orange or citrus bigaradia are the finest in fragrance and are the most esteemed. The harvest is in May and June. Four kinds of fragrant products are commercially made, namely, the flower oil or Neroli oil and orange flower water; orange flower absolute, petit grain oil from the twigs and buds and orange peel oil made by expression from the rind of the fruit

Present-day prices for these products are as follows:

Neroli oil $87.00 per pound, petit grain oil $8.50 per pound, sweet orange peel oil $3.50, and orange absolute $185.00 per pound. Most of the petit grain oil of trade comes from Paraguay.

The oil of orange peel is an entirely different product from the flower oil, which on analysis is found to contain linalol, nerol, linalyl acetate, phenyl ethyl alcohol, indol and methyl anthranilate. The characteristic odor of the flower is due to this latter constituent which is present to the extent of only 1%. It also gives the fluorescent appearance to the oil. The basic odor of orange peel oil is due to decylicalcohol of which only about 2% is present.

Synthetic neroli replaces the natural product for most purposes at one-fifth the price. No natural products of the orange flower are produced in the U. S. but California is turning out a fine quality of orange peel oil cold pressed. An experiment was made with orange peel to test the quality of the product obtained by steam distillation but the results were disappointing. A series of products were made from sweet orange, grape fruit, mandarin, kumquat and lemon peel by means of a volatile solvent which produced very fine flavored oils. Dextro limonene, which constitutes the greater portion of citrus oils, is also prepared commercially, and is also sold as an adulterant of the pure oils. Beta naphthol ethyl ether or nerolin is a synthetic chemical which is used as a substitute for orange flower products in soap flavor and has about the same odor value. The methyl ether is also used extensively and in trade is known as Yarayara.

Gardenia or cape jessamine introduced from South Africa is one of our most fragrant flowers produced in great abundance during the summer. The perfume is intensely diffusive and even objectionable to some persons. The flower is not used to prepare perfume compositions. The basic odor materials are benzyl, styrolyl and linalyl acetates with methyl anthranilate and terpineol.

Sweet olive is another one of our highly fragrant flowers which blossoms during the winter and spring. The flowers are quite insignificant but exhale an intensely diffusive fragrance, especially during the night. They are native to China and India where they are used to flavor tea. No natural flower products are employed in reproductions of the odor. The odor base is identical with that of the orange blossom but modified by the addition of traces of aldehydes C_{10} and C_{12} and their esters.

(*To be continued.*)

THE PURPOSE OF COÖPERATIVE WHOLESALE DRUG COMPANIES, AND WHAT THEY ARE ACCOMPLISHING.*

BY R. E. LEE WILLIAMSON.

A profound and widespread interest has, for several years, been shown in the plans and progress of the coöperative wholesale drug business. This has largely been caused by the great volume of business which has flown through the coöperative companies, and the natural interest of the trade in a new and unusual method of merchandising.

At the commencement of this method of wholesaling, the influencing reason that prompted the effort was largely, if not entirely, due to the status of the retail drug business in most of the large metropolitan cities which made it almost impossible for the retailer to secure a gross profit that would allow him to make more than a living. There was no such thing as the average retailer getting ahead and accumulating a surplus. In fact, the great majority of the retail pharmacists in the large cities were reaching a condition in which they were conducting their stores practically without profit, eking out a bare existence. This was a crushing and disheartening situation, which was having a ruinous effect upon pharmacy, blasting the lives of those in the profession, and lowering the standard of pharmacy in regard to the class of men entering the schools of pharmacy. Something had to be done; some help had to be secured. Pharmacists, in their extremity, turned in many

* Presented to and read before the Section on Commercial Interests, A. Ph. A., Asheville meeting, 1923.

directions, and applied to every source from which they had a right to expect help, but none was to be found. There was no hope of remedying conditions except through their own ingenuity. The help had to come from their own ranks. Necessity for imperative relief is, and always will be, the impulse behind any new or unusual idea or movement.

To meet the serious conditions confronting them, and to measure up in some manner to the situation which called for quick action to save their professional and business lives, they did a very natural thing in calling together a group of pharmacists, men of their own profession, affected by the same conditions, and suffering from the same business troubles, to discuss ways and means of producing a remedy. Out of such conferences sprang a determination on the part of these men to pool their interests.

It was determined to do collectively what they could not do alone—to buy their big selling items in large quantities direct from the manufacturer, thus securing the lowest price; and to divide the purchases into such proportions as each required, thereby putting themselves in a position to be able to sell these goods at the same price that their competitors were selling them, and keeping their customers from going to the cut-rate stores, thus holding the business that naturally belonged to them, and at the same time making at least a sufficient profit on that class of merchandise to pay a small net profit, where actual loss had previously been incurred.

The idea slowly developed and the results were so eminently satisfactory that it was a natural step on the part of these pharmacists to enlarge the group, so as to make it possible to increase the number of items dealt in and thereby enlarge their profits in the aggregate. It was from this small and crude beginning that the large coöperative drug companies have grown.

About thirty years ago, the first group to make this effort was organized in the city of Philadelphia, and from this very small group of determined men sprung a large coöperative company. From the earliest formation of this company, the ruling spirit was coöperation, unselfish help, determined and intelligent teamwork.

Sincerity of purpose and honest dealing won out, and from this small beginning one of the largest and most complete wholesale drug companies in the United States has been built. Five or six years after this beginning a company was started and established in Washington, D. C., on the same principle, and with the same ideals, and because of the same conditions there and, about two years later, in this same manner and for the same causes, one in Baltimore, Md.

The underlying business principles upon which these companies were founded are that of supplying a simple but efficient means of distributing merchandise, and to lower the cost of same by eliminating many unnecessary, and often much-abused, accommodations, in deliveries and extended credit.

It is not difficult to visualize the financial advantages derived from being a stockholder and a customer of the wholesale or jobbing companies conducted upon such principles. Not only are the financial returns considerable, but there are many other benefits that grow out of the close relationship which stockholders and customers are bound to have through their association as such, placing them in a position to greatly improve their business methods—through the facilities thus offered to become more intimately acquainted with each other, giving an opportunity for

the exchange of business ideas, business information and business methods—all of which have shown to these retail pharmacists the absolute necessity for proper book-keeping and accounting methods, and the handling of their affairs in a business-like, intelligent manner.

There has been but one fundamental purpose influencing the coöperative wholesale drug companies, and that has been to supply a retail pharmacist with merchandise at as low a cost as possible, in order that his net earnings or profit will be sufficient to compensate him for his labor, and the commercial risk of his capital.

The plan is a most natural one, and is in keeping with the efforts of all experts on economic questions—to eliminate the waste practices in the distribution of merchandise of an essential nature. At this time the Government, and many technical institutions and commercial associations are making efforts to eliminate uneconomic methods and wasteful practices that are being shown to exist in the established handling and flow of raw material to the finished product, and on into the hands of the consumer. Without doubt, the coöperative wholesale drug companies in the past thirty years have been accomplishing this identical thing. Those are the reasons for, and the purpose of, the many coöperative drug companies that have been developed during the past quarter of a century or more.

WHAT THEY HAVE ACCOMPLISHED.

In the first place, they have clearly shown that the idea is thoroughly practicable, and can be financially and safely maintained; they have grown from one small company, with little capital, and very few customers, to over twenty-five companies, with a total invested capital of over $7,000,000.00 with over 12,000 customers, and an annual business of over $60,000,000.00, saving their customers annually over $6,500,000.00 on the purchase of their supplies. These are the cold, unsentimental figures, and, if that was all, I feel that it can be said, without boasting, that it is a wonderful accomplishment; but it is not all, this coöperative plan has been the means of bringing the pharmacists of the communities in which they are located together in an intimate business relationship, and there has grown out of this association a very marked improvement in the general character of the stores, reflecting better service to the customer, and indirectly creating a more substancial distributing service for the manufacturers and importers. It has taught retail pharmacists the value of paying bills promptly, and in this important feature of business has made them better business men. It has put them in a position to buy merchandise in the quantities that are required for a healthy and normal turnover at approximately as low a price as if bought in larger quantities than the business required. Because of this feature a more rapid turnover of merchandise is possible and does not require the tying up of an unnecessarily large amount of the capital on the shelves. In other words, the benefits secured mean less money tied up, and quicker turnover of stock: two of the soundest principles of good merchandising.

Another of the many things that the coöperative wholesale drug companies have accomplished for the real benefit of the retail pharmacists (and this may be the most vital benefit) is that it has given them the means by which they can successfully compete with the cut-rate drug stores, and the rapidly growing chain store problem; to meet such competition, undoubtedly the coöperative wholesale drug companies are the independent retail pharmacists' only salvation.

In conclusion, notwithstanding the fact that practically 25 per cent. of all of the retail pharmacists of this country are stockholders and customers of the coöperative wholesale drug companies, if the movement was more thoroughly understood and the ideals and unselfish efforts were better known, a very much larger number would be enjoying the benefits and help that these unselfishly conducted companies are offering.

DISPENSING AND DISPENSARY PRACTICE FOR STUDENTS.

BY FREDERICK J. WULLING.*

Introduction: In commenting on the relative importance of dispensing as a part of the pharmaceutical curriculum, a teacher of dispensing, seemingly speaking for an entire faculty, stated to me recently that he felt dispensing should begin immediately upon entrance of the student and should continue and be graded throughout the two-, three-, or four-year courses. He would include in the course the study of Latin, weights and measures, medical properties, and doses. After the student would have mastered the beginning of metrology, this teacher would take advantage of the fact that some dispensing is very simple, involving nothing more than removing portions of the contents of a larger container to a smaller one and labeling properly, and begin the simple technique of dispensing and then grade into more difficult work concurrently with the student's progress in his work in other subjects. This instructor felt that the student should be imbued at the earliest moment with the sense of responsibility and with the consciousness of professional dignity, which he thought accrued from the nature of the work of dispensing and from the contact with the public which it involves, more than from other divisions of the curriculum or practice.

According to some inquiries and observations I have made since, this view-point is not an isolated one. It may therefore be pertinent to discuss the matter here briefly under three headings:

1. The Place of Dispensing in the Curriculum.
2. The Quantitative Relation of Dispensing to Other Subcourses.
3. The Scope and Nature of the Course in Dispensing.

I. The Place of Dispensing in the Curriculum: A thoroughly competent pharmacist recognizes that all of his training and experience culminate in that part of his professional activity which consists in the compounding or dispensing of prescriptions, because the delivery of the compounded medicine to the patient is the direct and final service which the pharmacist renders to the public. In this final service is involved a previous and indirect study and knowledge based upon and extending deeply down into the roots of all of the basic sciences and arts constituting the foundations of all the departments of every well-formulated pharmaceutical curriculum. Dispensing is therefore the specialized application of a broad, comprehensive knowledge and training towards the particular end, with the participation of the physician, of providing competent medication for those who need it. The responsibility and liability of the pharmacist reach their greatest degree at this point, for here the practitioner surrenders possession of the compounded medi-

* University of Minnesota.

cine. With this surrender goes the implied warranty and guarantee that the medicine has been prepared with all of the carefulness, skill and efficiency required by the statutes and that all of the ingredients fully meet the pharmacopœial or other designated requirements. (It has always seemed to the writer that upon the basis of this responsibility, involving life and death as it does, the practice of pharmacy merits the fuller recognition by the public of the status of a profession.) All this, however, as I see it, has only little to do with the place of dispensing in the curriculum. Dispensing alone is not the practice of pharmacy. To learn to dispense may be the final aim and purpose of the student but he cannot become proficient in the art without completing all of the other divisions of the curriculum, most of them previously and some concurrently, and his qualification as a dispenser bears a direct ratio to his qualifications in the many other divisions of the course of study, each one of which is essential to the rounding out of a good general course of study in a college of pharmacy. The question, then, of the place of dispensing in the curriculum is one of sequence. Every well-formulated and balanced course of study is graded and the wisdom and thoroughness with which this is done depend upon the good judgment, coöperation and general ability of the faculty or others having the matter in charge. None of these, as far as I know, admit the student to dispensing at once upon entering. On the other hand, practically all faculties put dispensing into the second half or last third of the degree course and there is where it rightly belongs. A time will come, indeed it is on the way, when colleges, probably through the American Conference of Pharmaceutical Faculties, will more greatly unify and standardize their courses and establish uniform course prerequisites. Then all teachers and faculties will recognize, as most of them do now, that logically there are several prerequisites to dispensing and that it is absurd to establish dispensing as a subcourse without prerequisites.

II. The Quantitative Relation of Dispensing to Other Subcourses: A regular college course consists of the aggregate of the subcourses. Many of the latter have just grown up or were formulated or given by the respective instructors without regard for or adaptation to the content or extent of other subcourses. This fact accounts for the unbalanced courses of studies of some colleges. It is excusable and in some cases commendable that faculty members should have exaggerated ideas of the importance of their respective courses. There are instances where enthusiastic and aggressive faculty men have succeeded in over-emphasizing and over-developing their own departments at the expense of others. Not only should each subcourse be graded but the entire curriculum should be graded, leveled and harmonized in an equitable way. It is a dean's business to see that this is done. In most colleges the curriculum is fairly well balanced, the weights or values of the subcourses being expressed in units based upon the number of lecture or laboratory periods, or upon both, of the respective subcourses. The unit or credit value of each subcourse should be determined by the collective judgment of the entire faculty and not by the judgments or wills of the respective instructors individually. The sequence of the subcourses and their prerequisites should also be established by the whole faculty collectively and coöperatively. This should also apply as to what shall constitute the several subcourses and what their respective contents should be. With such a procedure for establishing equity in a curriculum, it would not be easily possible to weight the subcourse of dispensing with what should constitute sepa-

rate subcourses in metrology, Latin, therapeutics and posology as suggested by the instructor in dispensing referred to above.

III. The Scope and Nature of the Course in Dispensing: This should be determined as suggested above by the entire faculty. Most courses in dispensing are well composed and I will therefore not go into details in this respect. I desire to emphasize rather the desirability or indeed the need of making the course as practical as possible to afford a wide and varied experience for the students. Every college should provide opportunity and practice for students in the compounding and dispensing of actual prescriptions written by practicing physicians for actual patients. This can usually be done most easily and effectively by taking over or taking charge of, the dispensing departments of dispensaries or hospitals. I do not advocate conducting actual drug stores by colleges as part of their teaching activities. Possibly that will develop as a progressive step later on when practical drug store experience will no longer be required by law. At present pharmacists would not generally approve such a departure because of the competition involved.

The College of Pharmacy of the University of Minnesota has been in charge for over a quarter of a century now of the dispensing of prescriptions in the university free dispensary, and in the university hospital since its establishment. The dispensary practice is part of, and runs concurrently with, the latter portion of the college course in dispensing and affords practical dispensing experience of the most valuable kind for the senior students. For the purpose of this experience the senior class (the third-year students in the regular three-year course, and the third- and fourth-year students in the four-year course) is divided into sections of four or five students who receive instruction and direction by the dispensary and hospital pharmacists who are members of the pharmacy faculty and who are paid jointly from the budgets of the colleges of pharmacy and medicine. The students have previously had considerable didactic and laboratory instruction in the well-equipped college dispensing laboratory and are sufficiently trained to enter upon the dispensing of prescriptions for actual patients. Their work is critically supervised and directed and checked by the hospital and dispensary pharmacists who have been for many years graduates of the college. For many years now the students have assisted in dispensing an average annually of well over 22,000 prescriptions. Most of the prescriptions are formulated ones and have to be compounded. Another very valuable experience factor lies in the fact that the students prepare in the pharmacy laboratory nearly all of the preparations that enter into the prescriptions. They also manufacture many of the pharmaceutical chemicals and cultivate many of the botanicals in the medicinal plant laboratory.

In this connection it may be worth mentioning that the college has had an affirmative influence in getting the dispensary and hospital clinicians to write formulated prescriptions in connection with their clinical instruction of the medical students.

A number of colleges have similar facilities. It is hoped that soon all will become fully effective in this respect.

THE CENTENARY OF THE ELECTRICAL AGE.

In 1824 Michael Faraday, then a young research worker, made his first experiment to see if he could produce electricity from a magnet; from this experiment the age of electricity may be said to date. Faraday worked under Davy, and Davy was for some time an apothecary's apprentice.

THE DEPARTMENT OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

IT IS ALL IN THE DAY'S WORK.

BY ZADA M. COOPER.*

("Every secretary of a national organization has without a doubt a great deal of experience which would be interesting if told in an entertaining way. Prof. Zada M. Cooper, secretary of the A. C. P. F. is giving her experience and I trust that the readers of the JOURNAL will be interested in it. There are also good lessons for Conference members indicated in this tale and I hope that our members will read it carefully."—C. B. JORDAN, Editor.)

Many things of interest occur in the course of the regular work of the secretary of the Conference. For the most part none of these may be made a part of an annual report in which business matters receive consideration.

There are requests for all sorts of information and in so far as it is possible this is supplied or the individual is referred to some one who can give the information desired. Requests have come rather frequently for a classification of schools of pharmacy from secretaries of state boards and prospective students and, strange to say, the Belgian Embassy asked for such a report. Of course, it is not possible to supply this information at the present time. The most that can be done is to send a copy of the latest Conference Proceedings with its roll of member-colleges and refer them to the booklet issued by the state of New York. The frequency of these requests convinces one of the importance of the adoption of some method of classification, such as that proposed by the Conference Committee on Higher Educational Standards. One realizes what it would mean to have the Carnegie Foundation undertake a study of our schools. People seeking such information have a right to something less vague than a statement that certain named colleges are members of an organization whose *minimum* requirements are thus and so, when everybody knows that some are giving very much more than this minimum to say nothing about wide differences in faculties, library and laboratory facilities and equipment.

Apropos of work done, the head of an institution, not the best, reminds us that we *should know* that his school is in the upper fourth of the schools in the United States and that compliance with Conference rules, when he doubted their wisdom, is too much for us to expect. Furthermore the Conference had had but little to do with the school in the past and would have little influence on the sort of school they expected to maintain in the future. Is it not evident that the prestige of having membership is worth $25 per year, perhaps will be worth $35 now that it has been increased, and that nothing more is desired, when a decade passes without that institution having a representative at any annual meeting? It proves the wisdom of the Conference requirement that a college must be represented at least once in three years. How could the Conference accomplish anything if every institution looked upon its membership so lightly?

Very numerous are the letters setting forth the advantages of various resorts and wonderful hotel accommodations as an attraction for our conventions. One of these, not a typical one by any means, contained the following paragraph:

* Secretary of the American Conference of Pharmaceutical Faculties.

"You are probably aware that the Province of Quebec has been termed the balance wheel of the North American Continent, for there the individual liberties of the citizens have not been disturbed, and Montreal is able to offer a hospitality in entertaining guests which, under the existing laws, cannot be equalled by any other city in America." In addition to the statement that our meetings are held "at the same time and coincident with the annual meeting of the American Pharmaceutical Association" your secretary in replying added the following: "Your statement, that in the province of Quebec 'the individual liberties of the citizens have not been disturbed and that Montreal is able to offer a hospitality in entertaining guests which, under the existing laws, cannot be equalled by any other city in America,' interests me very much. Doubtless you refer to the ease with which 'alcoholic beverages' may be obtained there. You are probably not aware that the American Pharmaceutical Association was one of the first national organizations to go on record as absolutely opposed to the liquor traffic, that the pharmacists of the United States as a class are sober and law-abiding, that the delegates to the American Conference of Pharmaceutical Faculties would not dignify by the title of individual liberties anything which contributes so largely to poverty, insanity and crime. In my judgment, the committee that recommends the choice of places of meeting and the voting body itself would not consider a city that included among its attractions for a convention that sort of 'hospitality.'"

All sorts of entertainers, lecturers, readers, poets and musicians want to assist in making our convention a success. If we engaged a fair representation from those who offer their services, for a consideration of course, we should be turning our programs into a vaudeville performance. We would be much decorated if the makers of badges could have their way. Each delegate would need an extra bag or two to carry away the souvenirs that we are solicited to buy and distribute.

It is all in the day's work.

AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES.
SUMMARY OF THE PROCEEDINGS OF THE 1924 MEETING.

The twenty-fifth annual meeting of the American Conference of Pharmaceutical Faculties was held at the Hotel Statler, Buffalo, New York, on August 25–26, 1924. Forty-four colleges located in thirty states were represented and there were ninety delegates in attendance. President Charles W. Johnson presided at all the sessions.

President Johnson stressed the importance of using every "influence to have pharmacy definitely catalogued as the equal of other professions." He outlined a plan for the use of the credit hour as a basis for measurement of work. He urged that college curricula be arranged to provide training in all types of pharmaceutical work. The importance of well-trained teachers was emphasized; degrees may not "mean much to the old experienced teacher" but young people who show teaching ability should be urged to do graduate work and graduate work should be a part of every college of pharmacy. He suggested that the Conference provide for a class of associate members. He also suggested that in some courses credit be given for work *in absentia*. The report of the committee on President's address follows:

"The members of the Committee read with very great pleasure and interest the splendid address of the President in which he discussed so many questions of vital interest to present-day pharmacy. Very careful study was made of the various recommendations included in the address and if it meets with your approval our findings will be given seriatim.

"Recommendations one and two relative to the use of the term 'pharmacist' by the U. S. Civil Service Commission and to the proposed classification of pharmacists by the Personnel

Classification Board are approved, with the recommendation that Dr. Edward Kremers and Dean C. W. Johnson coöperate and advise with the Executive Committee in the matter.

"Recommendation three relates to the continuation of the standing committee on a Survey of the Colleges of Pharmacy by the Carnegie Foundation for the Advancement of Teaching. This recommendation is approved by the committee.

"The fourth recommendation of the President refers to the evaluation of the credit hour and is approved in principle, by the committee. However, in view of the fact that the methods now in use in the various institutions comprising this Conference differ so widely, we recommend the appointment of a special committee of three to study this matter and to report at the next annual meeting.

"The President next recommends that our schools make full use of the courses given in colleges of business administration in so far as they can be applied to retail pharmacy, and arrange four-year curricula to meet present-day problems of retail pharmacy. This recommendation is approved in principle.

"In recommendation six, the President advocates that the Conference provide for a class of associate members so as to allow colleges of pharmacy recently organized within well-established institutions of higher learning to become affiliated with the Conference, 'said associate membership to continue until the institution concerned can meet the requirements for full membership.' This recommendation is approved.

"Recommendation seven relates to the giving of credit by the member-colleges of the Conference for collegiate work done *in absentia*. The committee recommends that such credit be given for instruction, in academic subjects only, and when conducted under the direction of the Extension Division of recognized universities of the country, whose credits are accepted by state departments of education or other accredited educational bodies."

Respectfully submitted,
CHARLES H. LAWALL,
FREDERICK J. WULLING,
EDWARD H. KRAUS, *Chairman*

The report of the secretary-treasurer, Zada M. Cooper, showed a membership of fifty-one colleges, one having been admitted during the year. Her report showed further that expenditures had been exceeding receipts considerably, and an estimate of expenses for 1924–1925 indicated the necessity of increasing receipts or reducing expenses. There was a balance of $584.77 in the treasury.

Dean Charles B. Jordan, Chairman of the Executive Committee, reported the admission of the Detroit Institute of Technology College of Pharmacy and Chemistry. He urged all member colleges to use the Conference Section in the JOURNAL of the AMERICAN PHARMACEUTICAL ASSOCIATION to express their views on educational matters. The study of the preparatory work of students entering member colleges showed some interesting statistics and they are given here:

"Total number of students entering Conference colleges	4440
Number of special and repeating students	134
Number of students who had less than high school requirements	408
Per cent. of students who had full high school requirements	88
Per cent. of specials and repeaters	2
Per cent. of students who had less than high school requirements	9

This means that 88 per cent. of all entering students were graduates of high schools or had equivalent training. All but four of the Conference colleges are demanding high school graduation or its equivalent. The following recommendations made by the Executive Committee were adopted:

1. "That by-law number three be amended to read: 'The faculties holding membership in this Conference shall pay an initiation fee of $25.00 and an annual fee of $35.00.'

2. "That the Chairman of the Executive Committee and the Secretary be authorized to codify the by-laws and that the corrected draft appear in the printed Proceedings of the 1924 meeting.

3. "That the Chairman of the Executive Committee and the Secretary be authorized to make a revision of the by-laws and present the revision at the next annual meeting. Copies of

the proposed changes are to be submitted to the member colleges two months prior to the annual meeting.

4. "That the Conference representatives to the National Drug Trade Conference be appointed as follows: The incoming President of the Conference shall appoint one representative for one year, one representative for two years, and one representative for three years, and thereafter there be appointed by the President annually one representative to serve three years.

5. "That any institution failing to have one or more representatives at the annual meeting for three successive years shall automatically lose its membership, such representatives to be directly connected with the institution, either as members of its teaching staff or its administrative body.

6. "That the Conference indorse the work being done by the National Association of Boards of Pharmacy, toward setting minimum standards for recognition of colleges of pharmacy by state boards."

Reports were received from the standing committees. In this report for the Committee on Activities of Students and Alumni, E. L. Newcomb recommended that the Conference urge colleges to conduct campaigns for the headquarters building among their students and also ask alumni associations to endorse the campaign. The Conference voted to concur in the recommendations.

The Committee on Selection of Degree for Three-Year Course, Charles H. LaWall, chairman, made the following report: "Your committee appointed to consider the matter of the degree to be given at the completion of the three-year minimum course in pharmacy (of 2250 hours) which begins in 1925, has studied the subject severally and conferred, and it is our recommendation that the degree Ph.G. be continued for the three-year minimum course." The report was adopted.

The Committee to consider "What Cultural Subjects Should Be Added to the Pharmacy Curriculum," Wortley F. Rudd, chairman, placed English first and said that it should "Train in the art of correct expression" and "it should lead into a love for and an appreciation of what is best in literature." Next in importance they placed a course in sociology, history and government.

E. Fullerton Cook reported on the Pharmaceutical Laboratry Conference that was held the previous week and requested that when the 1925 program is planned provision be made for one session on "teaching methods." On motion, the Conference approved the suggestion.

The following papers were presented:

"Shall We Teach Chemistry by the Project Method"—John C. Krantz, Jr.

"Standardization of Courses of Instruction in Schools of Pharmacy"—Albert Schneider.

"The Management of State Supported Colleges of Pharmacy"—Adolph Ziefle.

At the joint session of the Conference with the National Association of Boards of Pharmacy, Dr. Charters gave a splendid address on the Study of Pharmacy from a Vocational Standpoint, which study is being made by the Commonwealth Fund. Dr. Charters explained something about how the study is being made, illustrating with specific examples. The joint session expressed a deep appreciation of the work that Dr. Charters and his committee are doing for the profession of pharmacy. A vote of thanks was given the founders of the Commonwealth Fund and Dr. Charters for the performance of this important work.

"The desirability of annual conferences of individual state boards of pharmacy with the faculties of colleges of pharmacy in their states, to interchange ideas and keep abreast of the trend of educational and practical work in pharmacy" was discussed by Robert P. Fischelis and Lucius L. Walton and the joint session voted to recommend to the constituent bodies that such conferences be held.

"Shall the subjects covered by board examinations be increased and shall the questions on the subjects be more difficult following the inauguration of the three-year course" was discussed by Rufus A. Lyman and H. C. Christensen.

"The relative value of examination questions which are directed toward ascertaining the fundamental knowledge of a candidate as compared with questions which are merely tests of memory" was presented by Julius W. Sturmer.

At this session, E. G. Eberle reported that the Fairchi[illegible]olarship had been awarded to Ishua Seidman, a student at the New Jersey College of Pharmacy.

At the close of the first session Dean Burbridge of the School of Pharmacy of Dalhousie

University, Halifax, Nova Scotia, and Professor A. B. Stevens, formerly of the staff of the College of Pharmacy of the University of Michigan, were presented and spoke briefly.

The annual dinner was held in the Georgian room on August twenty-fifth. The speakers were Dr. Charters, Dr. Augustus B. Downing, Mr. H. C. Christensen, Dr. H. V. Arny.

At the Executive Session, Charles B. Jordan presented the following recommendation signed by six members of the committee. "That the Executive Committee, unanimously, for members present, recommends that the resignations of the following colleges, Brooklyn College of Pharmacy; University of Buffalo, Buffalo College of Pharmacy; Fordham University, College of Pharmacy; Union University, Albany College of Pharmacy, be accepted, said resignations to remain effective until these colleges comply with the Conference requirements for membership." The recommendation was adopted. On motion it was voted that the courtesy of the floor should be extended to these colleges.

It was voted to make the following addition to by-law seven:

"No change in qualifications for admission to or membership in the American Conference of Pharmaceutical Faculties shall be made unless the same shall have been presented in writing to the Conference at a regular meeting and to the members of the Conference by mail at least one year prior to its adoption and unless it shall have been adopted by a two-thirds vote of all member colleges represented at a regular meeting."

The following officers were elected for the ensuing year:

President—Washington H. Zeigler, Charleston, South Carolina.

Vice-President—Robert P. Fischelis, Newark, New Jersey.

Secretary-Treasurer—Zada M. Cooper, Iowa City, Iowa.

Chairman of the Executive Committee—Charles B. Jordan, Lafayette, Indiana.

Members of the Executive Committee—Julius A. Koch, Pittsburgh, Pennsylvania; Wortley F. Rudd, Richmond, Virginia. (Other members of the Executive Committee are Edward H. Kraus, Ann Arbor, Michigan; Henry M. Faser, Oxford, Mississippi.)

Members of the Syllabus Committee—John G. Beard, Chapel Hill, North Carolina.

Respectfully submitted,

ZADA M. COOPER, *Secretary.*

Approved: C. B. JORDAN, *Chairman Executive Committee.*

REPORT OF THE FAIRCHILD SCHOLARSHIP COMMITTEE.

To the Joint Meeting of the American Conference of Pharmaceutical Faculties, The National Association of Boards of Pharmacy, The Section on Education and Legislation, A. Ph. A., Buffalo Meeting, 1924:

The Fairchild Scholarship Committee is composed of the President of the American Pharmaceutical Association, the President of the American Conference of Pharmaceutical Faculties, the President of the National Association of Boards of Pharmacy; the Editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION is the Chairman of the Committee. In providing for this scholarship Mr. Samuel W. Fairchild asked that the committee be so constituted. The situation developed this year that two members of the Committee were of schools represented by candidates for the scholarship, hence more than heretofore the Chairman assumed the work of the Committee.

At the joint meeting in Cleveland the bodies here represented voted as follows: that candidates for the Fairchild Scholarship should have just completed their first year in a school or college of pharmacy, a member of the American Conference of Pharmaceutical Faculties; a candidate should have successfully completed a four-year high school course and no additional training or education shall debar him from admission to examination, the purpose of candidates being to continue the study of pharmacy; the questions asked of candidates shall be based on first year of Pharmaceutical Syllabus. Provision was made that the examination for the Fairchild Scholarship shall be held on the second Monday of June in each year, and if deemed advisable the examination will be extended over two days instead of completing the work in one day.

The other rules adopted heretofore were also made part of the instructions to the Fairchild Scholarship Committee; hence there was no preliminary work for the Committee to do and the

Chairman under instructions from the Committee sent out letters in due time asking for information relative to the schools that would have a candidate or candidates, also requesting the schools not having candidates to make such report.

After securing the information relative to the number of candidates, the Chairman was instructed to ask coöperation in preparing the examination questions. The following assisted in this work: L. L. Walton of the Pennsylvania Board of Pharmacy; Prof. Henry E. Kalusowski, Dean of George Washington University National College of Pharmacy, Washington, D. C.; Prof. Gordon A. Bergy, Dean of the Department of Pharmacy, School of Medicine, Morgantown, W. Va.; and Dean Theodore J. Bradley, of the Massachusetts College of Pharmacy, Boston, Mass.; to whom the thanks of the Committee are due and extended.

The Chairman of the Fairchild Scholarship Committee was instructed by the members of the committee to arrange a set of questions based on those submitted. The University of the Philippines having a candidate, and the time required for conveying mail to that destination not being fully considered, the questions on Chemistry were compiled rather hurriedly; otherwise the Chairman would have arranged them differently and probably included others, but the set having been sent to the Philippines it was not thought advisable nor just to change those going to other institutions. However, since the results of the examinations have come in, the Chairman almost feels that no apology or explanation is necessary, for only the results in Pharmaceutical Arithmetic are better than those in Chemistry. Quite naturally for an examination of this kind the questions differ somewhat from those given by any one school.

The questions were sent by registered mail to the schools that had signified they would have a candidate or candidates for the Fairchild Scholarship examination. After the examinations were concluded the questions with answers were sent by registered mail to the Chairman. In each case there was a request for return receipt. The questions and answers without any names or marks that might indicate the schools or candidates were sent to Dean William B. Day, who kindly offered with the assistance of the members of the Faculty to grade the answers. The Chairman feels deeply indebted for this assistance, which represented several days' work during a vacation period, and extends thanks to them, in which he is joined by all members of the Committee.

The Chairman thought he had devised a smoothly running system of mailing and remailing and it should have worked well without mishap or delay; misunderstanding occurred in only two cases, due to the post-office at the respective places handling mail differently from other stations. The Chairman was worried for a time, but the situation cleared after all matter mailed and remailed had been checked up.

The prospects were for more candidates this year but, strange to say, again sixteen schools were represented in the examination by twenty-four candidates; others, who first contemplated entering, for one reason or another failed to take part.

Eight of the candidates averaged 75 or over in the examinations and the records of these are herewith submitted:*

The average grade of the 24 candidates in Pharmacy was 64.12+; the lowest 30, the highest 77. The average grade in Pharmaceutical Arithmetic was 78.87+; the lowest was 43, the highest 96. The average grade in Botany, etc., was 68.27+; the lowest was 37, the highest 93.8. The average grade in Chemistry was 68.41+; the lowest was 38, the highest 86. The general average was 70.27+; the lowest was 37, the highest 83.45. The highest records are as follows: Arithmetic, 96; Botany, etc., 93.8; Pharmacy, 77; Chemistry, 86. The lowest records are represented by the following percentages: Chemistry, 38; Pharmacy, 30; Arithmetic, 43; Botany, etc., 37.

In Botany, Histology, etc., the average was 68.27+; twelve candidates made the average and a like number graded below. The general average in Pharmacy was 64.12+; eleven candidates made this record or more and thirteen failed to do so. The best averages were made in Arithmetic; sixteen are rated above 78.87+ and eight below that grade. The average in Chemistry was 68.41+; candidates were equally divided above and below the average.

The candidate making the highest general average, namely, 83.45, was first in Botany, Histology, etc., sixth in Arithmetic and third in Pharmacy, and tied for fourth place in Chemistry.

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* The super figure of the percentage number in tabulation designates rank in the respective branch; where two students tied the figures so indicate.

The second candidate was first in Chemistry, eighth in Botany, Histology, etc., second in Arithmetic, and tied for seventh rank in Pharmacy. The third candidate was second in Botany, Histology, etc., had sixth place in Pharmacy, ninth in Arithmetic, and tied for fourth place with two others in Chemistry. The fourth candidate was third in Botany, Histology, etc., had fourth place in Pharmacy, tied with two others for twelfth place in Arithmetic, and tied for third place in Chemistry.

Analyzing the records in another way, the candidate who was first in Botany, Histology, etc., was sixth in Arithmetic and third in Pharmacy and tied for fourth place in Chemistry. The candidate who was first in Pharmacy was fifteenth in Botany, Histology, etc., tied with two others for ninth place in Arithmetic, and ninth in Chemistry. The candidate who was first in Arithmetic had ninth place in Pharmacy, twentieth place in Botany, Histology, etc., and fifth place in Chemistry. The candidate who was first in Chemistry was second in Arithmetic, eighth in Pharmacy and eighth in Botany, Histology, etc.

Eight candidates had a general average of more than 75, their rating is shown in the table; the superior numbers following the figures indicate the standing in that particular branch. Of these eight candidates all but the first one fell below 75 in some branch—two in Pharmacy, one in Botany, etc., two in Chemistry. The average of all in Pharmacy was 64.12; of the eight, 71.37; Arithmetic 78.87–85.75; Botany, 68.27–80.66; Chemistry, 68.41–76.5. It will be noted that in the averages for all the lowest records were made in Pharmacy, next in Botany, etc., next Chemistry, highest in Arithmetic. For the eight highest the places of Chemistry and Botany, etc., were transposed; Arithmetic remained highest and Pharmacy lowest. The general average of all in all subjects was 70.27, of the eight 78.55. The highest individual average in all subjects was 83.45.

	Pharmacy.	Arithmetic.	Botany, etc.	Chemistry.	Average.
1	75^{3}	86^{6}	93.8^{1}	79^{4}	83.45
2	67^{8}	94^{2}	78.5^{8}	86^{1}	81.37
3	70^{6}	82^{9}	84.5^{2}	79^{4}	78.87
4	74^{4}	78^{12}	82.0^{4}	80^{3}	78.50
5	76^{2}	91^{4}	79.5^{7}	62^{12}	77.12
6	71^{5}	92^{3}	63.0^{17}	81^{2}	76.75
7	76^{2}	80^{11}	83.0^{3}	66^{10}	76.25
8	62^{11}	83^{4}	80.5^{5}	79^{4}	76.12

The candidate making the highest average is Ishua Seidman, a student who has completed his first year in the New Jersey College of Pharmacy.

Respectfully submitted,

E. G. EBERLE, *Chairman.*

BUSINESS PRINCIPLES SUBMITTED BY U. S. CHAMBER OF COMMERCE.

A statement that accompanies a proposed business code which is being sent out to various organizations for approval, by the U. S. Chamber of Commerce, follows:

"The function of business is to provide for the material needs of mankind, and to increase the wealth of the world and the value and happiness of life. In order to perform its function it must offer a sufficient opportunity for gain to compensate individuals who assume its risks, but the motives which lead individuals to engage in business are not to be confused with the function of business itself.

"When business enterprise is successfully carried on with constant and efficient endeavor to reduce the costs of production and distribution, to improve the quality of its products, and to give fair treatment to customers, capital, management and labor, it renders public service of the highest value. We believe the expression of pinciples drawn from these fundamental truths will furnish practical guides for the conduct of business as a whole and for each individual enterprise."

TWO OILS OF CHENOPODIUM.

Dr. A. R. Bliss in a paper at Buffalo, A. Ph. A. meeting, reported on oils of chenopodium produced by W. A. Konantz* and Maryland oils. The writer's conclusions are that oil of chenopodium properly distilled from plants cultivated in the Middle West, is as efficacious as the "Maryland Oil."

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* JOUR. A. PH. A., March 1924.

NATIONAL CONFERENCE ON PHARMACEUTICAL RESEARCH.

ABSTRACT OF MINUTES OF THIRD ANNUAL MEETING.

The third annual meeting of the National Conference on Pharmaceutical Research was called to order by Chairman H. V. Arny, at Hotel Statler, Buffalo, at 10 A.M. on August 23, 1924.

Roll-call showed the following delegates present:

From the *American Conference of Pharmaceutical Faculties*—W. H. Zeigler, E. N. Gathercoal and C. H. Stocking.

From the *American Drug Manufacturer's Association*—H. A. B. Dunning and J. P. Snyder.

From the *American Pharmaceutical Association*—H. V. Arny, W. L. Scoville and H. M. Whelpley.

From the *American Pharmaceutical Manufacturers' Association*—B. L. Maltbie.

From the *Bureau of Chemistry, U. S. Dept. Agriculture*—W. O. Emery and J. C. Munch.

From the *National Association of Boards of Pharmacy*—L. L. Walton, H. L. Meredith, F. E. Mortenson and H. C. Christensen.

From the *National Association of Retail Druggists*—Louis Emanuel and J. H. Webster.

From the *National Formulary Revision Committee*—H. A. B. Dunning, S. L. Hilton, C. W. Snow and P. H. Utech.

From the *Proprietary Association*—D. E. Combs and E. F. Kemp.

From the *U. S. P. Revision Committee*—C. H. LaWall, E. F. Cook, E. L. Newcomb and P. S. Pittenger.

"UNOFFICIAL OBSERVERS" FROM OTHER BODIES.

Council on Pharmacy and Chemistry, A. M. A.—Torald Sollmann.

Section on Medicinal Chemicals, A. C. S.—R. P. Fischelis.

Plant Science Seminar Group—A. Viehoever.

American Association of Agricultural Chemists—H. J. Humphrey.

Joint Committee on Definitions and Standards of Foods and Drugs—L. E. Sayre.

The minutes of the 1923 meeting were submitted and received after which the secretary-treasurer rendered his report for 1922–1924 as follows:

Receipts September 1922–August 1924	$260.00
Expenditures (same period)	145.10
Balance on hand	$114.90

The Committee on Constitution and By-Laws submitted as its report a new draft of these documents which after some slight modifications were adopted.

Dr. Viehoever in behalf of the Committee on Research Topics submitted a tentative list of about 50 problems connected with pharmacy that require investigation. The report was received with the understanding that the full report when completed will be published.

Reports were then presented by the chairmen of seven of our ten standing committees, those reporting being:

Committee.	Chairman.
Manufacturing of U. S. P. and N. F. Galenicals	E. F. Cook
Manufacture of U. S. P. and N. F. Chemicals	H. A. B. Dunning
Standardization of U. S. P. and N. F. Chemicals	C. H. LaWall
Sources and Identification of Botanic Drugs	H. W. Youngken
Standardization of Botanical Drugs	E. L. Newcomb
Chemistry of Drug Plants	W. O. Emery

A discussion of the functioning of these committees led to the adoption of a motion that questionnaires on research work and research topics be sent out by the Executive Committee and that the returns be allocated to the ten standing committees for proper classification.

After the appointment of a Committee on Nominations, consisting of Messrs. Zeigler, LaWall and Scoville, the Conference recessed for luncheon.

The afternoon session was called to order at 2:15 and the first business transacted was the receiving of views from the "unofficial observers."

Other business transacted included:

The passage of a motion directing the chairman to compile and publish a record of American pharmaceutical workers.

Discussion as to financing the Conference, giving rise to a number of suggestions and leading to the adoption of a motion, leaving details of financing to the Executive Committee.

Discussion of the A. Ph. A. Research Fund, and expression of the hope that other national drug associations provide similar research funds.

Discussion of the relation of National Conference on Pharmaceutical Research with the National Research Council resulted in the passage of the following resolution:

Resolved, that the National Conference on Pharmaceutical Research, with its ten functioning committees, representing every phase of pharmaceutical research proffers its aid to the National Research Council in whatever capacity it may be of service.

Adoption of a motion, directing the appointment of a committee to draft suitable resolutions, expressing to Dr. H. H. Rusby of New York the Conference's deep appreciation of his great services to pharmaceutical science in his explorations of South America in search of new drugs. The committee appointed consisted of Messrs. Youngken, Newcomb and Utech.

Adoption of a motion directing the admission into the Conference, without fees, of scientific bureaus of the U. S. Government and of three other research groups: Plant Science Seminar; Pharmaceutical Laboratory Seminar; Joint Committee on Definitions and Standards of Foods and Drugs.

The Committee on Nominations submitted as officers for 1924–1925 the following names: *Chairman*, H. V. Arny of New York; *Vice-Chairman*, J. H. Webster of Detroit; *Secretary-Treasurer*, Arno Viehoever of Philadelphia; and upon motion duly adopted, these three officers were reëlected for the coming year.

CONSTITUTION AND BY-LAWS OF NATIONAL CONFERENCE OF PHARMACEUTICAL RESEARCH.

(As Amended August 23, 1924.)

CONSTITUTION.

ARTICLE I.

This Association shall be called the National Conference of Pharmaceutical Research.

Its object shall be to encourage and stimulate, in every possible way, pharmaceutical research, using that term in its broadest sense. Its function shall be primarily to serve as a clearing house of American Pharmaceutical Research. In discharging its duties it shall act only in an advisory capacity, leaving the utmost freedom of action to the constituent organizations.

Among the outstanding fields of work in which it can be of service, the following may be mentioned:

1. The augmentation of special research funds.
2. Furnishing assistance in deciding upon the propriety of certain grants.
3. Encouragement of research among specific classes of potential workers.
4. Compilation of lists of research workers and of problems to be solved.
5. Devising plans and suggesting topics for research, and coördinating the work of the several organizations for doing such research work.

ARTICLE II.

The constituent organizations entitled to charter membership in this organization shall be the following:

The American Pharmaceutical Association.
The U. S. P. Revision Committee.
The American Conference of Pharmaceutical Faculties.
The National Association of Retail Druggists.
The National Association of Boards of Pharmacy.
The National Formulary Revision Committee.
The Proprietary Association of America.

The American Drug Manufacturers' Association.
The American Pharmaceutical Manufacturers' Association.
The U. S. Department of Agriculture, Bureau of Chemistry.

Other similar organizations whose attitude toward the Conference is friendly may be elected to membership at an annual meeting.

ARTICLE III.

The membership of this Conference shall consist of not more than four delegates from each of the constituent organizations.

ARTICLE IV.

The officers of the Conference shall consist of a Chairman, Vice-Chairman, and Secretary-Treasurer, all of whom shall be elected at the annual meeting and who shall hold office until the election of their successors.

ARTICLE V.

Voting at an annual meeting shall be limited to the constituent organizations, each body being entitled to one vote, which shall be cast by an accredited delegate. In the intervals between the annual meetings, when the vote is by mail, the votes of the individual members shall be counted and decisions based upon the majority of the votes cast.

ARTICLE VI.

For the purpose of meeting the nominal expenditures of the Conference for stationery, posting, mimeographing, etc., the annual dues for each constituent organization shall be $20.00. The dues of any constituent organization may be remitted by unanimous vote at the annual meeting.

ARTICLE VII.

Amendments to this constitution may be made by serving notice thereof to the constituent organizations at least thirty days previous to the annual meeting, and may be adopted by a two-thirds vote at the annual meeting.

BY-LAWS

ARTICLE I.

The officers of this organization shall perform the duties customarily pertaining to such offices and shall serve without remuneration.

ARTICLE II.

The officers of this organization shall act as an executive committee and with other members to be named by them, to constitute a committee for selecting topics for research.

ARTICLE III.

The annual meeting of the Conference shall be held at such time and place as decided by the executive committee.

ARTICLE IV.

The By-Laws may be amended by a majority of votes at an annual meeting.

REPORT OF THE SECRETARY OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

BY H. C. CHRISTENSEN.

Reports made by your Secretary in recent years might well serve as copy for part of this year's report, at least in so far as the work and service of the office is concerned. Each year we enthusiastically report that our field of activity is broadening and that we have had to speed up a little more to keep up with the demands on the office—and each year as Convention time brings us to an inventory of our work, we realize anew how fortunate we are in our enlarging opportunities for service. The Boards are pulling together as never before, and the Association of Boards is coming to be recognized as an increasingly important factor in the affairs of our profession.

Since our convention last year, up to the fifteenth of August, we have issued a total of 1115 reciprocal blanks, two of this number being complimentary to Board members. Of this number 612 have been reported accepted, 74 reported rejected, leaving a balance of 429 unaccounted for. We do not expect to have word right up to the time we close the records for the year, but even allowing a leeway of a month and a half since July first, we still have 298 of the blanks issued prior to that time unreported. Allowing for those states which have only two or possibly three examinations a year, and so have to hold applications sometimes for months, this percentage of unreported applications is higher than it should be.

DISTRICT MEETINGS.

Four District meetings were held during the year, District No. 4 at Des Moines, Iowa; District No. 6 at San Antonio, Texas; District No. 8 at Denver, Colorado and District No. 7 at Birmingham, Alabama. Your Secretary attended all of these meetings and at Denver—District No. 8—we were favored by having President Mortenson with us. With the exception of the Birmingham meeting—District No. 7—at which only two states were represented—Alabama and Florida—all meetings were well attended.

The subject matter discussed at these meetings was all of a similar nature, and in addition, problems of more or less local concern were gone into at each of the meetings. Comparison and discussion on standards and methods of examination—both by examination and reciprocity—particularly those phases which affect bordering states, was general, keeping in mind of course their relation to the states as a whole. Matters pertaining to proposed, desired or contemplated legislation, were also taken up. Particular attention was given to the proposition of planning for prerequisite legislation in those states in which college of pharmacy graduation requirements have not yet been enacted.

Some of the things on which discussion and action were had, are the following:

(1) Under the subject of Registration—both by examination and by reciprocity—the matter of proper safeguards to prevent fraud was discussed and recommendations made "that state boards of pharmacy adopt and enforce such rules and regulations covering requirements relating to identification, proofs of practical experience, preliminary education, college of pharmacy training, etc., as would serve to prevent imposters from securing entrance to examination or being granted reciprocal registration." Several instances were cited where a close scrutiny of applications and candidates had been the means of preventing fraud.

(2) Discussion at these meetings brought out the further fact that there is a tendency on the part of candidates—sometimes in one locality and sometimes in another—to take examinations in some state other than the one in which they have had their practical experience and then after passing examination, apply for reciprocal registration in their home state. All meetings were of the "unanimous opinion that this practice should be discouraged." It was pointed out that there could seldom be any valid reason for such procedure and that unless a reason satisfactory to the Board in the candidate's home state be given, that Board would be fully justified in refusing reciprocal registration under such conditions.

(3) All the meetings also recommended and approved the proposition "that reciprocal registration be not granted to an applicant who has previously failed in examination in the state in which he applies, unless said applicant has in the time intervening graduated from a school or

* Buffalo meeting, 1924.

college of pharmacy, or can show to the satisfaction of the Board a sufficient increase in knowledge of pharmacy subsequent to his failure.

(4) Another matter which received unanimous endorsement at all of the district meetings was the proposition adopted by the Secretary's office, of notifying the Secretary of the Board of Pharmacy of the recipient state, of date of issuance of reciprocal application blank, and name and address of applicants for reciprocal registration, so that the Secretary of the Board will have a check on any applicant who may proceed to practice with his application "in his pocket" instead of filing it promptly.

(5) At the Denver meeting a resolution was adopted as follows: "*Resolved*, that we favor placing upon every form of application (examination or reciprocity) a question as to whether the applicant has previously taken an examination for registration as pharmacist and, if so, when and where."

(6) Dean H. C. Washburn of the College of Pharmacy of the University of Colorado had submitted to the Denver meeting a proposition urging the adoption of a rule under which a graduate from a recognized college of pharmacy would be permitted to take state board examination upon graduation, even though he may lack the required experience; with the understanding that his state license, if one is earned, shall be withheld until after the necessary experience shall have been acquired. This proposition was opposed almost unanimously. However, inasmuch as a similar practice is in force in a few states, I recommend discussion with the point in mind that this Association should go on record either in approval or disapproval of such a proposition.

(7) All of the district meetings voted unanimously expressing their disapproval of any law or consolidation plan under which the "boards of pharmacy may lose their identity and be consolidated with other boards or commissions in a department, and under a head who may have no practical knowledge of the professions or vocations over which he may be given control."

(8) The importance of "Pharmaceutical and Chemical Problems" (arithmetical questions having to do with pharmacy, chemistry, materia medica, etc.) to be given as a separate branch or subject, was discussed at all of the meetings and on motion as follows, was adopted: "*Resolved*, that all of the states of this District make the subject of 'pharmaceutical and chemical problems' a part of their examination, to be given as a separate branch or subject, in accordance with the recommendations of the N. A. B. P. Advisory Examination Committee."

(9) The meetings also went on record recommending that there be coöperation between the various states when changes in pharmacy laws are sought, especially with reference to prerequisite standards and reciprocity, in order that inconsistencies and conflict may be avoided. It was agreed that the object sought, namely uniformity, might best be brought about by a careful study and adoption of at least such parts of the model pharmacy law (copies of which are available through the Secretary's office) as apply to qualifications to be required for registration by examination and reciprocity. It was recommended that states when preparing to make changes in their laws communicate with the Secretary's office, to secure copies of the model law and such information and aid as is available.

(10) The standardization of pharmacy schools and colleges, at least to the extent of preparing a list of schools and colleges to be recognized by the individual state boards of pharmacy, was considered of importance and worthy of special consideration by the National Boards.

(11) In the discussion on fees charged in the various states, for registration both by examination and reciprocity, inconsistencies and wide variances were brought out in this respect as well as along some other lines. Some states grant registration by examination, charging a fee of $5.00, while others charge as high as $25.00 for the same form of registration. Other states charge a nominal fee for registration by examination and a much higher fee for registration by reciprocity, which is, to say the least, an inconsistency, in view of the fact the privileges and duties of both classes of registration are identical, and less work on the part of the board is involved in registering by reciprocity than by examination. In one state where this discriminatory charge was in force for two years, following an official ruling, the Board members were required to refund personally the excess fees charged during that period for reciprocal registrations, and adopt the uniform fee of $15.00 for both forms of registration. It was recommended that when changes are made in any state law, efforts be made to adopt a uniform registration fee of $15.00, or at least to make the fee the same whether by examination or reciprocity.

(12) Three of the meetings, Districts Nos. 4, 5 and 8, endorsed the recommendation of the

N. A. B. P. made at the 1922 Convention and reaffirmed at the 1923 convention to provide for reciprocity for pharmacists registered in a few states prior to a certain specified date on the basis of grades made in examination in a recognized school or college of pharmacy as evidenced by diploma and accepted by the Board of Pharmacy in lieu of Board examination. The resolution adopted reads as follows:

> *Resolved:* That the boards of pharmacy of the states comprising this district approve the N. A. B. P. recommendation to provide for reciprocity for pharmacists registered on the basis of grades made in examination in a recognized college of pharmacy as evidenced by diploma, in lieu of board of pharmacy examination as in force in a few states prior to January 1, 1914, provided, however, that the applicant has since registration, ten or more years' experience in a retail pharmacy, and provided further that the applicant must have had, prior to this registration on diploma, the legal qualifications which would at that time have entitled him to entrance for examination in the state to which he applies for reciprocal registration.

In the handling of applications for reciprocity under this proposition the grades made by the applicant in examination in the college of pharmacy of which he is a graduate, are obtained by the N. A. B. P. Secretary's office, certified to over the seal of the college and the signature of someone in authority, and these are made a part of the permanent record of the applicant's original state board of pharmacy registration to be certified for reciprocity as having been accepted by the board in lieu of state board examination.

The meeting held in District No. 7 deemed it best, inasmuch as only two states were represented—Alabama and Florida—that this proposition be submitted direct to each of the boards constituting the district. On motion duly carried it was recommended that the Secretary submit this proposition to the various boards of pharmacy of District No. 7, for their individual action.

When it has been understood, with few exceptions, Boards of Pharmacy generally have adopted this proposition to extend reciprocity to the few registrants in states where this form of registration was in accordance with the law at a time when the disadvantages of such a method of registration were not so apparent as they are to-day.

Twenty-six states have given approval to date, and I have no doubt that when the proposition has been brought directly to their attention and thoroughly explained, it will be generally accepted by the remainder of the boards. It seems the fair thing to do. Certainly these graduate pharmacists are as fit and worthy as the average pharmacist—graduate or non-graduate—registered to-day with probably the minimum of experience.

Taken as a whole, the district meetings held were profitable as well as interesting. The lack of representation from three of the five states of District No. 7 was sincerely regretted. The presence of the entire Alabama board and four members of the Florida board, and the extreme interest and enthusiasm displayed by these delegates, made it doubly regrettable that the other three member states had no representative present at this splendid meeting. This was felt so keenly by those members who were present that the following resolution was approved:

> "Realizing keenly the necessity of a full attendance by the five boards composing the seventh district of the N. A. B. P. namely Alabama, Georgia, Florida, Louisiana and Mississippi, in order that the best benefits might accrue to the abovementioned states, and that the importance of a thorough discussion of all affairs pertaining to the advancement of Pharmacy and reciprocity may be had, so as to reach a better understanding regarding sectional conditions, *Resolved*, that the members present at the district meeting held in Birmingham, Alabama, February 13th and 14th, 1924, deeply deplore the absence of representatives from Louisiana, Georgia and Mississippi, and would urge upon each member of the Pharmacy Boards in these states the great importance of seeing that their states are represented at future meetings, as it is only in this manner that we can get together and straighten out harmoniously the differences that are likely to arise from time to time, as regards reciprocity, interchange, grading papers, etc.
>
> Be it further resolved that a copy of these resolutions be sent to each Board Member of the States composing the Seventh District, also to N. A. B. P. Headquarters."

The necessity for complete representation at these district meetings, the reasons for which are so well set forth in the foregoing resolution, is recognized officially by the N.A.B.P. Executive Committee, which spread upon its minutes at the April 1923 meeting the following:

". . . It is the sense of the meeting that not to exceed four district meetings may be held . . . . . provided that the Vice-President of the District in which meeting is to be held can give assurance of attendance of at least three members from each state in his district."

Your Secretary also attended the annual state pharmaceutical meetings of New Jersey, and of South Dakota, and President Mortenson attended the Arizona state meeting. Invitation to attend the New Jersey meeting came through Dr. Robert Fischelis, acting as Chairman of the "Committee on Papers and Queries" and the subject assigned was "The Value of the State Board of Pharmacy to Pharmacists and to the Public." The meeting was one of the very best state meetings it has ever been my good fortune to attend—enthusiastic and full of live topics having to do with real pharmacy, as well as matters pertaining to the commercial side. Before adjournment, the New Jersey convention passed a resolution, unanimously, directing the Board of Pharmacy and the Legislative Committee of the Association to take the necessary steps to have the state pharmacy law amended so as to enable the Board to "take advantage of agencies which are available"—meaning membership in the N. A. B. P. —as would give the pharmacists of New Jersey the same privileges and advantages of reciprocity as are available for pharmacists of forty-four other states and the District of Columbia. Later, your Secretary had a very pleasant conference with the members of the Board of Pharmacy at which all of the five members expressed themselves freely, as in favor of membership in the N. A. B. P. when their law is changed or amended as is deemed necessary. I have no doubt, therefore, that New Jersey will join the ranks of our Association in the not very distant future.

My attendance at the South Dakota meeting was by request of the Board of Pharmacy of that state, to give such aid as I could in preparing to amend their pharmacy law so as to provide for college of pharmacy prerequisite for entrance to examination for registered pharmacist. The meeting was well attended and much enthusiasm shown in discussion of the various matters brought before the convention. Drafts of amendments will be prepared by the Legislative Committee, using the model law propositions as a basis, and I feel certain that with the pep and push displayed by the South Dakota Association, a prerequisite law will be enacted at the coming session of the Legislature of that State.

President Mortenson attended the state conventions of Arizona and California, and took an active part in both of these meetings.

In addition to attendance at the state and district meetings mentioned, your Secretary, as Chairman of the Advisory Examination Committee, visited several state boards during the year, where methods of examination, questions, proposed changes in laws, etc., were discussed.

(The Secretary then gave a history of the development and growth of the Secretary's office.)

It is worth while noting that applicants for reciprocity pay the fee of $15.00 without complaint, and in many instances express themselves as heartily appreciating the reciprocal privileges made possible so generally between the various states by the state boards of pharmacy acting through their National Association, the N. A. B. P.

As a matter of fact, I think that the casual applicant for reciprocity thinks little about the fee. The advantage and economy of registering by reciprocity instead of undergoing the expense and anxiety of taking an examination makes the fee an insignificant matter.

Now that we can view it in retrospect, it is perfectly plain that the Association in employing a full time Secretary, and providing income, adopted the only course to insure permanent success. The experience of national associations of all kinds bears this out—Chambers of Commerce, Trade Associations, etc., all employ permanent officers of some kind and provide means for the payment of salaries, rent and other expenses just as an individual or business organization would do.

PRESENT SITUATION.

I think we may justly be proud of our achievements up to the present. I am confident we are on a solid foundation. There remains a great deal of detail work to bring our organization to the point of perfection we all desire. Our biggest outstanding fault is still, I think, lack of uniformity. There is a wide variation in our practices which needs to be narrowed before we will be on as smooth-running a basis as we should be. This can only be attained by each individual state giving its unreserved support to the National Boards of which it is an integral part. As our President has so ably pointed out, we meet annually, pass resolutions enthusiastically, then, too

often, we go home and forget about it. Like buying an auto and then neglecting the bolts, joints, lubricating system, etc., and expecting the thing to run and make easy riding. You've all had enough experience to know the result. That is not enough. We must get behind and push. Not push two or three days in a year, but push 365 days a year. We are prone to approve resolutions in annual convention—with a mental reservation. We approve something for the other fellow, without being willing to observe the rule ourselves.

In spite of our differences—wide as some of them are—existing between states, it is a marvel with what amicable agreement reciprocity is carried on. We are like the average family. We disagree on a number of things—each sticking more or less to his own ideas, and yet as a family, we hang together and turn up each year at the annual convention good friends, anxious and ready to work for what seems to us best and in the interest of our chosen profession.

This Association—our Association—of which each member board of pharmacy is a part, equal to that of any other member board stands ready to help any or all of the individual boards in a number of ways. Failure to ask or permit the Association to help frequently leads to a blunder on the part of a state. Let me illustrate by just one example. Copies of the draft of a "model pharmacy law" which is the result of joint efforts of the A. Ph. A. and the N. A. B. P. are available through the Secretary's office. It is basic and can be adjusted as a whole or in part to fit the conditions in any state. Note now what happened in one of our states which recently enacted a college of pharmacy graduation prerequisite law. It made college graduation mandatory; but it specified in that law that the candidate for examination for registered pharmacist must have two years of drug-store experience in addition to college graduation. That is O. K. while we are on a two-year college course basis, but see what happens when we go to three years. That will enforce five years before a man can take the examination, and if the colleges go to four years (they probably will, eventually) it will mean six years before one can qualify for examination in that particular state, unless the law is changed. Now, supposing that law had been worded a little differently—worded as in the "model law," copies of which were furnished this particular state—starting with a requirement of four years of drug-store experience which harmonizes in that respect with the laws now in force in nearly all the states; then require graduation from a school or college of pharmacy recognized by the Board of Pharmacy and credit on the experience requirement the time of attendance at college. So long as the two-year course is continued to be the recognized course, give credit for two years, leaving two years of drug-store experience. And when a three-year course or a four-year course was adopted, then give an additional year's credit, provided however, that the candidate must give proof of never less than one year of drug-store experience. The draft of the model law provides for this in a plain common-sense manner; so why not use it as nearly as possible in the form presented, instead of making changes and taking chances on inconsistencies creeping in and leading away from instead of toward uniformity? I can plainly see that state in a jam inside of the next five years. I am not holding up this state as a "horrible example," but its experience illustrates the point I am trying to make. We meet in annual convention and discuss and adopt the propositions along the various lines of our activities—laws, standards, examination methods, etc., and then too often we go back to our respective states and follow our individual whims in these important matters. This Association should not be placed in the position of having to coax and cajole states into accepting things which they themselves as members of the Association have approved.

All of our work is of national scope and the individual states benefit by it only when they put into effect in their own states the things which are generally acknowledged as beneficial. The waters of the spring quench the thirst of only those who drink. Our newspapers and magazines teem with advice, by recognized experts, on how to keep well, yet not an individual can cure a headache by simply reading the advice—he must act on the advice; he knows the advice is sound; he knows benefit will follow if the advice is adopted, but old human inertia just prevents him. So, too often, it is with our various units. The help is there, but we seem to prefer the headache. However, we are on our way. We may be like the proverbial black-strap in midwinter, we flow slowly, but eventually we flow.

SEVENTY-SECOND ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, BUFFALO, N. Y., AUGUST 26–29, 1924.

ABSTRACT OF THE MINUTES OF THE GENERAL SESSIONS.

First General Session.

All sessions of the seventy-second annual meeting of the American Pharmaceutical Association were held in Hotel Statler, Buffalo, N. Y.

President H. V. Arny called the seventy-second annual meeting of the American Pharmaceutical Association to order at 8:45 P.M., August 26. Vice-Presidents Lyman F. Kebler, F. E. Bibbins and W. Bruce Philip and Honorary President W. L. Du Bois were invited to seats on the platform. Secretary Wm. B. Day called the roll of Ex-Presidents and they were seated with the officers of the Association, visitors and members from other countries. Among the latter were Dr. I. M. Kolthoff of the University of Utrecht, Prof. G. A. Burbridge of Halifax and Alexander Stewart of Guelph, Canada. The following Ex-Presidents were in attendance: John Uri Lloyd, Henry M. Whelpley, Lewis C. Hopp, James H. Beal, H. H. Rusby, E. G. Eberle, John G. Godding, Wm. B. Day, George M. Beringer, Caswell A. Mayo, Frederic J. Wulling, Charles H. LaWall, L. E. Sayre, C. Herbert Packard, and Samuel L. Hilton. The only two absentees were Joseph L. Lemberger, on account of infirmity (91 years of age) and Julius A. Koch, whose mother had passed away just prior to the convention. Chairman L. L. Walton, of the House of Delegates, and Secretary Wm. B. Day aided President Arny in carrying out the evening's program.

The President called upon the Secretary to read communications. Resolutions adopted by the Board of Directors on the death of Ex-President John F. Hancock and of Edgar Leonard Patch —see pp. 374 and 844, Journal A. Ph. A., 1924—were concurred in and the members stood in silence for a few moments, in reverent memory of the deceased.

A letter from the American Fair Trade League was referred to the House of Delegates.

President Arny introduced and welcomed the visitors and requested Chairman L. L. Walton, of the House of Delegates, to preside during the reading of his address. He abstracted portions of the address, thereby materially reducing the time of presentation; he held the attention of the audience throughout the reading. The address is printed in the September Journal A. Ph. A., pp. 782–804; it was referred to the House of Delegates for action.

President Arny resumed the Chair.

The report of the Secretary was called for; it follows:

Report of the Secretary.

To the Officers and Members of the American Pharmaceutical Association:

In view of the country-wide drive for funds for the headquarters building, so successfully carried on by our committees organized for the purpose, and having in mind that the Board of Directors at its mid-year meeting authorized the granting of a year's membership in the Association to all non-members contributing twenty-five dollars or more, it was deemed best not to make any general drive for new members during this year for fear of confusing the issue of the headquarters campaign.

Through the branches, the schools of pharmacy and the individual efforts of officers and members, a considerable increase in the membership has been secured. There have been elected since the last convention more than 600 new members. The total membership at this time is approximately 4,200. These figures do not include any new members who will be granted membership on the basis of contributions or pledges to the headquarters building. It is surmised that there may be a thousand of these.

Volume 11 of the Year Book has been issued and distributed to the members since the last convention.

The sales of the National Formulary have held up well, 4,444 copies having been sold during the year 1923 and 1,187 copies during the first half of 1924. The total sales of the N. F. IV to June 1, 1924, amount to 47,406 copies.

A detailed report of the sales of the Association's publications (except the Journal) and of the receipts of the Secretary's office is attached.

A. Receipts and Expenditures on Account of National Formulary IV.
January 1, 1923, to December 31, 1923, Inclusive.

1. Expenditures.

J. B. Lippincott Co.—publication	$2984.00	
Louis C. Hesse—labels	14.25	
Journal A. Ph. A.—advertising	214.00	
Total expended	3212.25	
Transferred to A. Ph. A. Research Fund	2598.20	
		$5810.45

2. Receipts.

Sales:	Quarter ending March 1, 1923	$1474.42	
	Quarter ending June 1, 1923	1047.40	
	Quarter ending Sept. 1, 1923	1152.96	
	Quarter ending Dec. 1, 1923	3632.63	
			$7307.41

B. Supplementary Report.

Receipts and Expenditures on Account of N. F. IV.
January 1, 1924, to August 1, 1924, Inclusive.

1. Expenditures.

J. B. Lippincott Co.—publication	$ 520.00	
Louis C. Hesse—labels	14.25	
Journal A. Ph. A.—advertising	126.00	
		$ 660.25

2. Receipts.

Sales:	Quarter ending March 1, 1924	$1033.50	
	Quarter ending June 1, 1924	893.52	
	Total		$1927.02

C. National Formulary—Summary of Sales.

Quarter ending March 1, 1923:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	831	$1.605	$1333.755	
Buckram	94	1.935	181.89	
Interleaved	1	2.875	2.875	
Total	926	....	$1518.52	
Allowance for freight			44.10	
Remitted to Treasurer Kelly				$1474.42

Quarter ending June 1, 1923:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	520	$1.605	$ 834.60	
Buckram	107	1.935	207.045	
Interleaved	2	2.875	5.75	
Total	629	....	$1047.395	
Remitted to Treasurer Kelly				$1047.40

Quarter ending Sept. 1, 1923:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	620	$1.605	$ 995.10	
Buckram	106	1.935	205.11	
Total	726	....	$1200.21	
Allowance for freight			47.25	
Remitted to Treasurer Kelly				$1152.96

Quarter ending Dec. 1, 1923:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	1571	$1.605	$2521.455	
Buckram	590	1.935	1141.65	
Interleaved	2	2.875	5.75	
Total	2163	....	$3668.855	
Allowance for freight			36.23	
Remitted to Treasurer Kelly				$3632.63

Quarter ending March 1, 1924:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	500	$1.605	$ 802.50	
Buckram	121	1.935	234.135	
Interleaved	3	2.875	8.625	
Total	624	....	$1045.26	
Allowance for freight			11.76	
Remitted to Treasurer Kelly				$1033.50

Quarter ending June 1, 1924:

Binding.	Copies Sold.	Price.	Amount.	
Muslin	478	$1.605	$ 767.19	
Buckram	82	1.935	158.67	
Total	560	....	$ 925.86	
Allowance for freight			32.34	
Remitted to Treasurer Kelly				$ 893.52

D. Complete Summary of Copies of N. F. IV Printed and Bound. By J. B. Lippincott Co.—August 1, 1924.

Series.	Muslin.	Buckram.	Interleaved.	Total.
A	4500	5000	500	10,000
B	5700	4100	200	10,000
C	4000	1000	...	5000
D	2700	300	...	3000
E	2350	650	...	3000
F	1500	1500	...	3000
G	2000	1000	...	3000
H	2000	1000	...	3000
I	2500	500	...	3000
J	2200	800	...	3000
K	2000	1000	...	3000
Total	31,450	16,850	700	49,000

E. COMPLETE SUMMARY OF COPIES OF N. F. IV RECEIVED AND SOLD. BY MIDLAND PUBLISHING CO.—JUNE 1, 1924.

Year	Muslin.	Buckram.	Interleaved.	Total.
1916	7993	7279	487	15,759
1917	4472	1975	76	6523
1918	2750	493	8	3251
1919	2458	1116	21	3595
1920	2459	1391	17	3867
1921	2818	1083	5	3906
1922	3251	1521	4	4776
1923	3542	897	5	4444
Total	29,743	15,755	623	46,121
Adjustments for defective copies	—7	+38	—33	—2
Net Sales, 1923, incl	29,736	15,793	590	46,119
1924 6 mos	981*	203	3	1187*
Total Sales	30,717	15,996	593	47,306
Stock on hand Midland Pub. Co. 6/1/24	733	854	107	1694
Total recd. from Lippincott to June 1, 1924	31,450	16,850	700	49,000

* Includes 3 complimentary copies (Chairman Publication Committee).

F. SUMMARY OF RECEIPTS FROM N. F. IV TO AUGUST 1, 1924.

Year.	Amount.
1916	$28,108.69
1917	10,973.06
1918	4408.97
1919	7050.13
1920	6632.25
1921	6484.67
1922	8025.77
1923	7307.41
1924 (6 mos.)	1927.02
Total	$80,917.97

G. ACCOUNT OF N. F. V.

1. Receipts	None
2. Expenditures:	
1919 and 1920	$1033.89
1921	1169.98
1922	404.12
1923	227.72
1924	19.07
Total	$2854.78

H. ACCOUNT OF YEAR BOOKS, OLD PROCEEDINGS AND OLD EDITIONS OF N. F., ETC., YEAR 1923.

1. Receipts:		2. Expenditures:	
Year Books	$ 76.80	Year Book Vol. 10	$5122.48
Proceedings	9.75		
N. F. 111	1.35		
Code of Ethics	38.55		
Total	$126.45	Total	$5122.48

SUPPLEMENT—JANUARY 1, 1924 TO AUGUST 1, 1924.

1. Receipts:		2. Expenditures:	
Year Books	$ 43.20	Postage and Express	$ 12.15
Proceedings	46.07		
Total	$ 89.27	Total	$ 12.15

I. Account of Badges and Bars—1923.

Receipts from sales			$ 22.84
Expended for 9 gold bars			24.50
Stock on hand Jan. 1, 1924			
Gold badges	2	Gold bars	131

J. Summary of Receipts of Secretary's Office—Jan. 1 to Dec. 31, 1923, Inc.

N. F. IV	$7307.41
Year Books	76.80
Proceedings	9.75
Badges and Bars	22.84
N. F. old editions	1.35
Code of Ethics, etc	38.55
Dues of 108 New Members (Nos. 78 to 185, incl.)	540.00
Remitted to Treasurer Kelly	$7996.70

K. Supplementary Report of Receipts—Jan. 1, 1924 to Aug. 1, 1924, Inc.

Dues of New Members (Nos. 186 to 405)	$1100.00
Back dues of 1 new member	10.00
N. F. IV	1927.02
Year Books	43.20
Proceedings	46.07
Remitted to Treasurer Kelly	$3126.29

Respectfully submitted,
Wm. B. Day, *Secretary.*

On motion of W. C. Anderson, seconded by F. W. Meissner, and vote, the report was accepted and referred to the House of Delegates.

The report of the Treasurer was presented; it follows:

Report of the Treasurer of the American Pharmaceutical Association January 1, to July 31, 1924.

Funds of the American Pharmaceutical Association.

	1923.		1924.	
Current:				
Bonds and Savings Account	$25,417.63		$23,619.21	
Checking Account	2,171.73	$27,589.36	1,506.16	$25,125.37
Permanent:				
Life Membership	$29,403.78		$30,475.46	
Ebert Prize	1,390.36		1,363.96	
Centennial	3,956.52		4,108.52	
Endowment	9,870.59		10,326.88	
Ebert Legacy	5,720.81		5,952.31	
Research	22,141.41		25,194.84	
Headquarters Building	4,123.10	76,606.57	41,462.32	118,884.29
Trust:				
Procter Monument	$11,352.15		$11,912.66	
Remington Honor Medal	1,210.11	12,562.26	1,259.84	13,172.50
		$116,758.19		$157,182.16

Summary:

	July 31, 1923	July 31, 1924
Assets	$104,195.93	$144,009.66
Held in Trust	12,562.26	13,172.50
	$116,758.19	$157,182.16
Net increase 1924 over 1923		$40,423.97

Securities held for the Association and for the Trust Funds:

Massachusetts State 3% Bonds	$14,000.00	
St. Louis 4% City Bonds	12,000.00	
U. S. Liberty 4¼% Bonds	60,500.00	
		$86,500.00

The remainder of all funds is on deposit with the Boston Penny Savings Bank of Boston Mass., Savings Account, 4½% interest compounded semi-annually; the Drovers & Mechanics National Bank of Baltimore, Md., Savings Account, 4% compounded semi-annually; and with the Atlantic Exchange Bank & Trust Co. of Baltimore, Md., Checking Account, 3% compounded monthly.

The YEAR BOOK issued in 1924 has not been paid for, whereas the YEAR BOOK issued in 1923 had been paid for at the same time last year, so the net increase should be reduced by the estimated cost of the YEAR BOOK issued in 1924, which is $5,500.00.

The expenditures for the Headquarters Building Campaign to July 31st, were $7,208.55 and were paid out of the Current Funds, by order of the Board of Directors, so that all monies contributed to the Headquarters Building Fund are held intact for that purpose. Deducting the estimated cost of the YEAR BOOK issued in 1924, it will be noted that the Current Funds have been reduced by just about the amount expended for the Headquarters Building Campaign, which indicates that the receipts of the Association have been approximately equal to its usual current expenses and that the Association is, therefore, operating on a balanced budget, without using the income from the Life Membership Fund, amounting in 1923 to $1,052.33.

The income from the National Formulary for 1923 was $7,320.11, as compared with $8,090.52 for 1922, and the cost for 1923 was $3,463.39 and for 1922, $2,890.87. One-half of this income goes to the Research Fund and the remainder into the Current Funds.

Since Jan. 1st, the income from the JOURNAL amounted to $5,404.69 and the expenses $8,150.12, the net cost being $2,745.43.

Membership:	Sept. 5, 1923.	Aug. 27, 1924.
Honorary Members	13	13
Life Members (Old Style)	3	3
Life Members (New Style)	112	122
Membership Only	13	42
Dues paid for 1923	2810	
Dues paid for 1924	652	3171
Dues paid for 1925		216
Memberships on account of Headquarters Building Fund		167
	3603	3734

Respectfully submitted,
E. F. KELLY, *Treasurer.*

On motion of P. Henry Utech, seconded by F. E. Bibbins, and a vote the report was accepted and same action taken as for the report of the Secretary.

Treasurer Kelly said that the report of membership showed the status at the present time.

The report of the Secretary of the House of Delegates was called for. Secretary Day stated that "the annual report of the House of Delegates is printed in the proceedings of the Asheville meeting.* The first session of the House of Delegates, this year (1924), was held immediately before this present general session; there are represented in the House of Delegates at this time 7

* November JOURNAL A. PH. A., 1923, pp. 1001–1020.

national associations and 36 state associations, 6 branches, 5 sections and one department of the federal government—55 groups entitled to vote in the House of Delegates, as well as a number of fraternal delegates from colleges and local organizations.

"The House of Delegates organized; the credentials were certified to; the House received the report of the Board of Directors and action was taken in regard to the election of a full-time Secretary, which was deferred for another year.

"Upon nomination of the Board of Directors, the House of Delegates elected Mr. Louis Emanuel, of Pittsburgh, Honorary President; Evander F. Kelly, Treasurer, and Wm. B. Day, Secretary."

It was moved by Caswell A. Mayo, seconded by Ivor Griffith, that the report be accepted. Carried.

President Arny called on Chairman J. H. Beal for a report on the changes in the Constitution and By-Laws.

Chairman Beal stated that the rules required that proposed amendments be read at one General Session and action thereon be taken at the next General Session. The proposed amendments were read. (See September JOURNAL A. PH. A., pp. 851–859.) The first General Session then on motion duly seconded and a vote, adjourned.

SECOND GENERAL SESSION.

The Second General Session of the American Pharmaceutical Association was convened by President H. V. Arny, Thursday, August 28, at 2:00 P.M.

Minutes of the First General Session of the Association were read by Secretary Wm. B. Day. On motion of E. G. Eberle, seconded by W. C. Anderson, and a vote, they were approved.

The Secretary read the minutes of the first and second sessions of the House of Delegates. W. C. Anderson moved, seconded by P. Henry Utech, that the minutes be adopted. Carried.

President Arny announced that the next order of business would be consideration of the amendments to the Constitution and By-Laws and requested Chairman J. H. Beal to present them. He (Chairman Beal) stated that the consideration of amendments to Constitution and By-Laws was usually more or less tedious. He had attempted to summarize the recommendations as consistently as he could, without omitting anything, and asked the members of the Board of Directors to supplement the report, correct errors, if any, and observe that nothing is overlooked. "The first of the proposed amendments," he said, "apply to the Constitution, they are simple and might be characterized as merely bringing the Constitution into accordance with what has been our practice, with one exception." (The members will follow the Constitution and By-Laws as printed in the YEAR BOOK for 1922, and as revised and printed in the September JOURNAL A. PH. A., pp. 851–859.)

Chairman Beal moved that after the reading of each recommendation, it be concurred in and thus will be immediately before the session. The motion was seconded by George M. Beringer and carried by vote.*

In Article I, paragraphs 3 and 5, "apothecaries" was changed to "pharmacists." In Article III, the word "three" was changed to "two," and following "a Treasurer," include "an Editor of the Journal of the Association, and Editor of the Year Book," which makes them Constitutional officers. These are the only changes in the Constitution.

Chairman Beal explained that the articles of incorporation, or what we commonly term the Charter of the American Pharmaceutical Association, specifically states that the governing board of the Association shall be a Council consisting of 17 members. Chairman Beal therefore moved the change of "Council" for "Board of Directors" and stated that, later, provision would be made for 17 members in place of 9 members. The motion was seconded by W. C. Anderson. Carried.

In Chapter I, Article II, "ten days after its receipt" was changed by vote to "within thirty days from date printed upon the ballots." This fixes the date which was indefinite and extends the period of time for return of ballot. Article III was changed to read, "The ballots received within thirty days of date printed on the ballots." This again provides a definite period, but reduces the time between receipt of ballots by the Secretary and forwarding them to the Board of Canvassers, to 30 days.

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* Unless a report of discussions and printing of *Articles* is essential for explanation, only the adopted changes will be noted.—EDITOR.

Article V provided that the Secretary and the Treasurer "may be one and the same person;" the quoted words were deleted by vote. It was explained that these offices should not be held by one and the same person in an organization of the importance of the American Pharmaceutical Association. Article VI was stricken out, by vote, because no specific duties had been assigned to Vice-Presidents by virtue of being section chairmen, nor were provisions made for priority in succession to the presidency.

Chapter III, Article I, was changed by vote to read "Board of Directors" to "Council of 17 members." In order to make up these 17 members the following have been added to the officers previously enumerated: "President, two Vice-Presidents, Chairman of the House of Delegates, the Editor of the JOURNAL, the Editor of the YEAR BOOK, the Secretary and the Treasurer." The Chairman further stated that an officer who was worthy of membership on the Council should have the right to vote, and moved the deletion of the clause—"but the Secretary shall not have the right to vote." These changes were concurred in by adoption of a motion, duly seconded by George M. Beringer.

Article II of Chapter III was by vote changed to read—"Vacancies which may occur in the Council may be filled by vote of the Council. The members thus elected shall serve until their successors elected at the next annual election of the Association shall have been installed." The second clause of Article V was in like manner as foregoing, changed to read—"It shall elect the Editor of the JOURNAL and the Editor of the YEAR BOOK, the Historian and the Local Secretary." And the Article was further amended by striking out of the duties of the Council that "It shall elect the applicants for membership," and inserting—"Shall act upon the applications for membership."

Relative to Chapter IV—Finances—Chairman Beal said that "it was proposed to leave the Article as it now reads and add thereto the Rules of Finance." "These are the rules," he said, "which govern in detail the machinery and methods of appropriating money and spending money and accounting for money expended, etc." "We have recommended," he said, "that these Rules of Finance be collected into 15 articles and added to the first article. In other words, we are not changing anything, simply asking that these well-established rules of finance be made a regular part of our By-Laws." Concurrence was voted.

Chairman Beal explained Chapter V, relating to the House of Delegates, particularly Article I and specifically paragraph "a," it is proposed to include this in a new article.—See Article VI, p. 855, September JOURNAL. It was cited that these delegates usually have been "fraternal" delegates; the House of Delegates is to be a voting body, primarily representative of state associations, and, therefore, it is unwise to include delegates who are not acquainted with the functions of the House of Delegates, and a third reason presented by the Chairman was, that the Judicial Committee determined the constitution of the House of Delegates, and this Committee was not a Committee on Credentials. A motion to carry out the suggestions was adopted.

It was further recommended that the wording of paragraph "d" be changed so as to name specifically the National Associations entitled to representation. "The By-Law," Chairman Beal stated, "gives the Judicial Committee, and also the National Drug Trade Conference, the power to constitute the House of Delegates up to a certain point;" he, therefore, moved the change, lettering former paragraphs "b and c"—"a and b" and making paragraph "c" read: "One from each of the following Associations: National Association of Retail Druggists, National Wholesale Druggists' Association, American Conference of Pharmaceutical Faculties, National Association of Boards of Pharmacy, American Drug Manufacturers' Association, the Proprietary Association and the American Pharmaceutical Manufacturers' Association."

The other paragraphs are lettered in proper sequence.

Article IV, in due order, was amended to read: "The officers shall consist of a Chairman, and a Vice-Chairman, who shall be elected as provided in the By-Laws of the House of Delegates. The Secretary of the Association shall act as Secretary of the House of Delegates. These officers shall serve for one year or until their successors are installed."

The words of first line of Article V "At its first meeting," were replaced by "At its second session;" after a vote favoring the change.

Chapter VI, previously referred to, was now adopted by vote; Chapter VIII, Article II, was deleted and Article I was renumbered accordingly, making Committee on Local Branches No. 1. The Chapter (VIII) is now named "Standing and Special Committees;" Chapter IX becomes Article X of Chapter VIII and was revised to read: "Special Committees of the Association shall

be appointed by the President of the Association. Special Committees of the House of Delegates shall be appointed by the Chairman of the House of Delegates."

All of the foregoing changes were submitted to a vote and unanimously adopted. Attention to an omission being called by George M. Beringer, Chairman Beal stated that the terms "First Vice-President" and "Second Vice-President" should be inserted following the third line in Article I of Chapter one of the By-Laws, and shall read "three candidates for First Vice-President, one of whom shall be elected for one year; three candidates for Second Vice-President, one of whom shall be elected for one year." Likewise, in Chapter V, Article V, provision for nominations for First Vice-President and for Second Vice-President must be included in the duties of the Committee on Nominations.

Chairman Beal said further, the Treasurer collects the dues and, therefore, in the sixth line of Article III of Chapter II, the words "he shall collect the dues from the members" should be stricken out and the next Article should begin "The Treasurer shall collect the dues of the members."

A motion by the Chairman, seconded by George M. Beringer, to adopt the foregoing was carried.

Article II of Chapter II was by vote changed to read: "ARTICLE II. *Vice-Presidents.* In the event of the decease or incapacity of the President, the First Vice-President shall assume the duties of the President for the unexpired term of office and in the event of the decease or incapacity of both the President and First Vice-President, the Second Vice-President shall assume the duties of the President for the unexpired term of office."

President Arny stated that the editing of the changes would be done by the Secretary of the Council.

E. F. Kelly moved that the word "time" in the third line from the last of the paragraph of Article V, Chapter V, be omitted. Chairman Beal seconded the motion, and it was carried by vote.

Chairman Beal moved that the amendments recommended be adopted as a whole. George M. Beringer moved that "all articles of the prior Constitution and By-Laws not specifically included in this revision are hereby repealed." Chairman Beal asked if Mr. Beringer would accept an addition, that this resolution be printed at the top of the Constitution and By-Laws, or at the end, with the statement that it was adopted at a certain meeting. Mr. Beringer said this was acceptable and he would like to say "annulled and repealed." The motion—that of Messrs. Beringer and Beal—was put to a vote and carried.

Secretary Robert P. Fischelis read the report of the Board of Directors. This on motion of W. C. Anderson and seconded by E. G. Eberle, and vote, was received. The Second General Session was then adjourned.

(For Minutes of the Council, see September JOURNAL, pp. 845–870; those of the House of Delegates follow.—EDITOR.)

FINAL GENERAL SESSION.

The Final General Session of the American Pharmaceutical Association was convened by the President, H. V. Arny, Friday, August 29, at 7:30 P.M.

The minutes of the Second General Session were read and approved.

President Arny stated that the order of the program would be changed somewhat, if there was no objection; hearing none, announcements of awards were in order. President Arny first spoke of the grants made for research purposes from the American Pharmaceutical Research Fund.—The profits from the sale of the National Formulary go into this fund; half of the interest is added to the fund, and the remainder is available for research grants—this being given to eminent research workers who are rather inadequately but pleasingly rewarded for their work. The President stated that it so chances, the presiding officer is Chairman of the Research Committee, A. Ph. A. and, in the latter capacity, explained that $450 was available for grants this year, of which $300 had been awarded to Dr. David I. Macht and Mr. John C. Krantz, Jr., and $150 to Dr. C. C. Haskell of Richmond, Va.

Mr. Krantz was introduced. President Arny said that "the recipient of the award belonged to the younger pharmaceutical group from whom we expect to hear more and in whom we take particular pride. He has started on the right path and is imbued with the spirit of research." Concluding, the President remarked that Mr. Krantz was working under Dr. Macht and the

award was given to them jointly. The recipient thanked the Chairman and the Association. Dr. C. C. Haskell was not present to receive his award.

Chairman Paul S. Pittenger announced that the Ebert Prize had this year been awarded Dr. H. V. Arny. He said that when he (Dr. Pittenger) was awarded the Ebert Prize last year, at Asheville, and the words of presentation were addressed to him by Chairman Arny, he had no idea that this year the situation would be reversed. Chairman Pittenger then briefly explained the work for which the prize had been awarded. "Dr. Arny had found by the use of three color solutions, one of ferric chloride, one of copper sulphate and one of cobalt chloride, he could make three primary colors. The next task was more difficult and involved the use of these standardized color solutions in different proportions for duplicating other shades and colors. This important research work is the foundation of possible epoch-making advances for improving future U. S. P. and N. F. color standardization and determinations." At the conclusion of his remarks the recipient expressed feelingly but briefly his high appreciation of honors conferred on him.

Installation was proceeded with; Ex-President Caswell A. Mayo acted in the capacity of Marshall and introduced the officers-elect; he recommended them in his usual happy way for the respective offices and commended them to the members. Responsive to the words of introduction, the instruction and advice of the installing officer, the officials thanked the membership for the honors conferred and pledged service in behalf of the Association. The officers present and installed are as follows: Members of the Council—H. V. Arny, H. M. Whelpley, A. G. DuMez; Secretary, Wm. B. Day; Treasurer, E. F. Kelly; First Vice-President, Paul S. Pittenger; Second Vice-President, William Mansfield; Honorary President, Louis Emanuel; Chairman of the House of Delegates, W. Bruce Philip.

In introducing President-elect Charles W. Holton, the Master of Ceremonies referred to the fact that the father of the President-elect also had been a President of the American Pharmaceutical Association. The Installing Officer added, that the father and brother of Mrs. Holton had been presidents of the Association.

President Holton, in replying, stated that his knowledge of meetings dated back to the New Orleans convention of 1891, but he had been advised by Dr. Whelpley that he (the president) attended the Detroit meeting of 1888. While the latter period was more or less unknown he had acquired knowledge of the geography of this country by attending meetings of the American Pharmaceutical Association, aside from the valuable information gained from one Section or another, or from the general sessions, or in conversation with members; it was also the occasion of an annual meeting which added most to the happiness of his life, and many of the friendships he had formed. He dwelt upon the importance of the Headquarters as a factor in the progress of pharmacy and concluded by referring to his interest as a retail pharmacist, and said that when the retail pharmacists come to a realization of the advantages that are to be derived by membership in the A. Ph. A., their numbers within the Association would be largely increased.

Secretary Day, of the House of Delegates, read the minutes of the third and of the final sessions. Motions applying to the reading of both minutes were separately made and voted upon; motion by Caswell A. Mayo, seconded by Jeannot Hostmann, to accept and approve the actions of this body were carried.

Jacob Diner moved a rising vote of thanks for those who had contributed to the success of the meeting in Buffalo—the Local Secretary and co-workers, the various local committees, the Hotel and all others who had a part in the work—the members signifying their assent by rising.

Secretary Robert P. Fischelis made a final report of Council proceedings, in abstract:

"The Council held four meetings since the last General Session. The results of various votes taken are as follows: Voted to reaffiliate with the Drug Trade Bureau of Public Information; approved the grants from the Research Fund which were announced here this evening; approved of the appropriation for the National Conference on Pharmaceutical Research; elected applicants for membership in the regular order, and others, who had contributed to the Headquarters Building fund.* The Council also elected Prof. Ivor Griffith, editor of the Recipe Book, to coöperate with Chairman Lascoff and the Committee on Recipe Book in the production of that work.

The Council also voted to appoint a Committee of Five on headquarters building plans. The Chairman of the Council appointed Dr. H. A. B. Dunning, chairman of this Committee, with

* See Council Minutes in September JOURNAL A. PH. A.

power to select his associates. Final action was approval of a bill for the work of the Committee on Recipe Book.

A motion by Mr. Antonow to give a rising vote of thanks to the outgoing President, H. V. Arny, was carried unanimously.

The Seventy-second annual meeting of the American Pharmaceutical Association was then adjourned.

HOUSE OF DELEGATES, AMERICAN PHARMACEUTICAL ASSOCIATION.

ABSTRACT OF THE MINUTES OF THE SESSIONS HELD IN HOTEL STATLER, BUFFALO, N. Y., AUGUST 26–29, 1924.

The first session of the House of Delegates, A. Ph. A., was convened by Chairman L. L. Walton at 7:45 P.M., Tuesday, August 26.

The first order of business announced by the Chairman was roll call and the verification of credentials.—Secretary Day stated that the credentials in his hands included those of 7 national associations, 36 state associations, 6 branches, A. Ph. A.; 5 sections, A. Ph. A.; and one Federal department. "Each of these," he said, "is entitled to one vote." He requested that those present as delegates respond as the names were called and to designate the voting delegate. The names of delegates and organizations represented follow; the name of organization or state is in italics, names of delegates in capitals and small capitals, and the names of the voting delegates in bold face.

NATIONAL ASSOCIATIONS.

American Conference of Pharmaceutical Faculties—**Zada M. Cooper,** WM. F. GIDLEY.
National Association of Boards of Pharmacy—**H. C. Christensen,** R. W. STERLING.
National Association of Retail Druggists—**J. H. Webster.**
American Drug Manufacturers' Association—**A. R. L. Dohme,** J. FRED WINDOLPH.
National Wholesale Druggists' Association—**D. M. Cowan,** CHAS. GIBSON, GEO. B. HUBBARD.
American Pharmaceutical Manufacturers' Association—**B. L. Maltbie.**
The Proprietary Association—**E. F. Kemp,** A. H. BEARDSLEY.

STATE ASSOCIATIONS.

Alabama—**Lawrence C. Lewis,** W. C. THOMASON.
Arizona—**Arthur G. Hullett.**
California—**W. Bruce Philip.**
Connecticut—**B. E. Höckert,** LOUIS MONTANARO.
Colorado—**Chas. J. Clayton,** HOMER C. WASHBURN.
Delaware—**George W. Rhodes.**
Florida—**D. W. Ramsaur,** W. D. JONES, W. M. HANKINS.
Georgia—**Sinclair Jacobs.**
Illinois—**S. L. Antonow.**
Indiana—**Fred A. Meissner,** C. B. JORDAN.
Iowa—**George Judisch,** WILL W. HAIRE, J. W. SLOCUM.
Kansas—**N. G. Edelblute,** A. H. KING, JOHN SCHMITTER, L. E. SAYRE, M. NOLL.
Kentucky—**Linwood A. Brown,** DR. O. C. DILLY, J. W. GAYLE, J. J. GOODWIN, F. W. BLESI.
Maine—**T. J. Bradley,** E. W. MOORE, M. L. PORTER.
Maryland—**Robert L. Swain,** GEORGE A. BUNTING, C. L. MEYER.
Massachusetts—**C. Herbert Packard.**
Michigan—**J. H. Webster,** R. I. LAKEY.
Minnesota—**Edwin L. Newcomb,** J. P. JELINEK, CHAS. T. HELLER.
Mississippi—**H. M. Faser,** C. I. FLETCHER, J. T. MATHIS.
Nebraska—**David S. Simms.**
New Hampshire—**William D. Grace,** ALBERT H. SEIFERT, CHARLES E. DUPORT.
New Jersey—**Jeannot Hostmann,** CHARLES W. HOLTON.
New York—**Jacob Diner,** JOHN SCAVO, GUSTAVE HORSTMAN.
North Carolina—**J. G. Beard,** E. V. ZOELLER, I. W. ROSE.
Ohio—**Theo. D. Wetterstroem,** EDWARD SPEASE, OTTO MOOSBRUGGER.
Oklahoma—**D. B. R. Johnson,** TOM R. HADLEY.
Oregon—**A. Zieffle.**
Pennsylvania—**L. L. Walton,** ADOLPH SCHMIDT, J. A. KOCH.
South Carolina—**W. H. Zeigler.**
South Dakota—**C. B. Baldwin,** E. R. SERLES.
Tennessee—**W. J. Cox.**
Texas—**W. H. Cousins.**
Virginia—**W. F. Rudd,** A. L. I. WINNE, W. G. CROCKETT.
West Virginia—**Gordon A. Bergy,** G. O. YOUNG, E. K. HOGE.
Wisconsin—**H. G. Ruenzel,** G. V. KRADWELL.

A. PH. A. BRANCHES.

Baltimore—**B. Olive Cole,** HERMAN ENGELHARDT.
Chicago—**E. N. Gathercoal,** WILLIAM GRAY, I. A. BECKER.
Detroit—**Walter M. Chase,** WILBUR L. SCOVILLE.
New York—**H. B. Smith.**
North Carolina—**E. V. Kyser.**
Northern Ohio—**Edward D. Davy,** L. C. HOPP, EDWARD SPEASE, NEIL T. CHAMBERLIN, OTTO MUHLHAN, EUGENE SELZER.
Pittsburgh—**Louis Emanuel.**
Philadelphia—**Ambrose Hunsberger,** E. FULLERTON, COOK, IVOR GRIFFITH, PAUL S. PITTENGER, ARNO VIEHOEVER, E. G. EBERLE.
University of Washington—**C. W. Johnson,** JOS. R. ANDERSON.

U. S. DEPARTMENTS.

Treasury Dept. U. S. Public Health Service—**A. G. DuMez.**

A. PH. A. SECTIONS.

Commercial Interests—**John H. Webster.**
Education and Legislation—**H. L. Meredith.**
Historical—**A. R. L. Dohme,** H. C. CHRISTENSEN, H. M. WHELPLEY, H. S. NOEL.
Practical Pharmacy and Dispensing—**J. A. Becker.**
Scientific—**E. V. Howell.**

COLLEGES AND UNIVERSITIES.

Alumni Association of Columbia University—GEORGE C. DIEKMAN, JEANNOT HOSTMANN, R. S. LEHMAN.
New York Academy of Pharmacy—JACOB DINER, WILLIAM ANDERSON, R. S. LEHMAN.
Philadelphia College of Pharmacy—C. H. LAWALL, J. W. STRUMER, IVOR GRIFFITH, ARNO VIEHOVER, F. P. STROUP.
Howard University College of Pharmacy—CHARLES J. FUHRMANN.
Brooklyn College of Pharmacy and Kings County Pharmaceutical Society—WM. C. ANDERSON, HENRY B. SMITH, THOS. D. MCELHENIE.
George Washington University, School of Pharmacy—AUGUSTUS C. TAYLOR.
University of Minnesota—G. BACHMAN. E. L. NEWCOMB, F. J. WULLING.
California College of Pharmacy—HAYDEN M. SIMMONS.
Columbia University College of Pharmacy—H. H. RUSBY, GEO. C. DIEKMAN, H. V. ARNY.

Chairman Walton inquired whether the credentials of voting delegates had been verified. The Secretary replied in the affirmative and the Chairman declared these voting delegates as constituting the membership of the House of Delegates, including also the officers of the Association and the members of the Board of Directors (Council).

Chairman Walton appointed as members of the Committee on Nominations for officers of the House of Delegates: E. L. Newcomb, Chairman; Robert L. Swain, J. G. Beard, A. Ziefle and Charles J. Clayton. As members of the Committee on Resolutions and on President's Address: Jeannot Hostmann, Chairman; George Judisch, Ambrose Hunsberger, B. L. Maltbie, Linwood A. Brown, D. M. Cowan, D. B. R. Johnson, F. W. Meissner and Theodore D. Wetterstroem. As members of the Committee on Nominations of candidates for officers of the Association and members of the Board of Directors (Council): C. Herbert Packard, Chairman; Henry M. Whelpley, E. N. Gathercoal, Robert P. Fischelis, H. L. Meredith.

Chairman Walton appointed as Committee on By-Laws of the House of Delegates: E. F. Kelly, Chairman; S. L. Hilton and A. G. DuMez.

Secretary Robert P. Fischelis presented the report of the Board of Directors—these have been printed in the JOURNAL A. PH. A. as Letters of the Board of Directors. The report was on motion of F. W. Meissner, seconded by Charles J. Clayton, and a vote, accepted.

Secretary Day presented a letter and resolution from the American Medical Association—it was referred to the Committee on Resolutions.

Chairman Walton stated that delegates would have the opportunity of presenting resolutions at the second session—these must be in writing.

Secretary Robert P. Fischelis reported that the Board of Directors had nominated for Honorary President, Louis Emanuel of Pittsburgh; for Secretary, William B. Day of Chicago; for Treasurer, E. F. Kelly of Baltimore. He also reported the following request from the Board of Directors: "That the House of Delegates be requested to postpone the election of a full-time Secretary for one year and that the previous communication from the Board recommending the election of a full-time Secretary be recalled."

Chairman Walton asked the pleasure of the House of Delegates relative to the postponement of the election of a full-time Secretary. Jeannot Hostmann asked whether the election of officers could be postponed until the next session.—The Chairman replied that he could find no authority for suspending the By-Laws.

Chairman J. H. Beal said in part, that the Board of Directors, after very careful consideration, deemed it necessary to ask for postponement of the election of a full-time Secretary. A "worth-while" Secretary would command a corresponding salary and clerical assistance, as well as traveling expenses. All told, these expenses would be not less than $8,000 annually; this additional money is not on hand, without encroaching upon the Association's permanent funds. The expenses for the Headquarters Building had gone beyond prior estimate and other plans to be presented will mean further expenditure. "The Board of Directors felt," he said, "that it was the part of wisdom, the part of due and proper caution and business prudence to defer this step for one more year. We think it can be done without interfering with the plans that we are carrying out. We have money, of course, but those monies are locked up in the form of permanent funds. The Constitution determines the manner in which they can be withdrawn, and only withdrawn in that manner. It is very difficult and at the same time I think it would be unwise.

"Not only is the Board of Directors disappointed, but we realize that this means a disappointment to some other people as well—Prof. Hostmann, in particular, who is the father of this organization plan, or very largely so. But if anybody can come to the Board of Directors and show us how we can safely undertake these additional expenses for the Association we will gladly yield our assent. The responsibility is upon this House of Delegates, therefore, Mr. Chairman, to say whether or not we shall take this step. If you can see your way clear to do it, understanding that you are taking the responsibility of instructing the Board of Directors, we will submit very graciously."

Mr. Hostmann asked whether it would be possible to borrow from the general funds.

Chairman Beal was asked by Chairman Walton to reply. He said: "We could borrow from the general funds if we act in good faith, and we shall of course not act in any other way. We can borrow just the same as we would borrow from a bank, by giving proper collateral. That is the only way. It would be unheard of in this Association for us under any form of pretence of

borrowing to take money out of a fund that is established for one particular purpose and use it for something else, but if we take it from those funds I, as one of the persons responsible for that fund, would demand the same security in the way of collateral that any ordinarily well-conducted banking institution would demand. My duty would require nothing less."

Chairman Walton said he recalled no motion before the House.

H. M. Whelpley moved, in order to place the matter in parliamentary form, that the report on nominations be accepted and the election of officers be proceeded with. F. W. Meissner seconded the motion.

Mr. Hostmann said that the matter of employing a full-time Secretary was now before the House of Delegates for decision. He realized that the Board of Directors had given the proposition careful consideration, but the delegates should not consider the subject too lightly. Service is the point of contact with retail pharmacists and this Association. The active members here know what the A. Ph. A. is doing for the retail pharmacists, but the average retailers are not active in our ranks and do not realize that. The question of a permanent Secretary has been used everywhere for enlisting coöperation for membership and, in a way, for the headquarters building fund. He admitted the splendid work done for the latter. He contended that delay in making the reorganization plan effective in this important particular—the full-time Secretary—would react and discourage, and that immediate service to associations would arouse new interest. He asked the delegates to weigh the proposition carefully before deciding to postpone the election of a full-time Secretary. He thought that a good man would bring in revenue through additional membership, which would go far toward defraying the expenses incurred thereby.

A vote was called for and resulted in approval of the recommendation of the Board of Directors. Election of officers was proceeded with and, in regular order, the following were elected: Louis Emanuel, Honorary President; William B. Day, Secretary; E. F. Kelly, Treasurer.

The first session of the House of Delegates was then adjourned.

Second Session.

The second session of the House of Delegates, A. Ph. A. was convened by Chairman L. L. Walton at 2:00 P.M., Wednesday, August 27, a quorum being present.

Minutes of the first session of the House of Delegates were read by Secretary Wm. B. Day and approved.

Chairman Walton called for the report of the Committee on place of meeting, Theodore J. Bradley, Chairman.

Chairman Bradley reported that there had been a number of invitations presented from different sections. The Committee, after considering all of them, had reached the decision to report in favor of Des Moines, Ia. This section of the country has the proper interest in pharmaceutical organizations; the City of Des Moines has more than adequate hotel accommodations and pleasant surroundings and in other ways is acceptable.

The recommendation was seconded by H. M. Whelpley and the House voted unanimously to adopt the report of the Committee on Place.

Secretary Wm. B. Day read his report. The Chairman announced that since the reports of the general officers—Secretary and Treasurer—read at the General Session, contained no recommendations it would not be necessary for the House to act on them.

The annual address of President H. V. Arny was received from the General Session and referred to the Committee on President's Address.

Chairman E. F. Kelly of the Special Committee on By-Laws presented the report of that Committee.

The report was accepted for action at the next session of the House.

The By-Laws are printed in the August Journal A. Ph. A., pp. 754–755. The amendments proposed by the Committee follow:

Chapter I, Article III is amended by inserting the word "or" in place of the comma following Association, in fifth line, and inserting a period after organization, and striking out "or department of the Federal Government." A new article, Article IV, is inserted; it reads:

"Article IV. *Fraternal Delegates.* Fraternal delegates may be received from organizations not entitled to voting delegates. These delegates shall have the privileges of the floor in other than executive sessions, but without vote."

Former Article IV becomes Article V.

In Article I, of Chapter II, change word "second" to "final"—first word of tenth line. End of Article II, change "of the Board of Directors" to "by the Council."

In twelfth line of Article II, Chapter III, change "in January of each year" to "at least two months before the annual meeting."

In Chapter IV, Article I, 4th line replace "five" by "nine," and in 6th line following "President" insert "First Vice-President, Second Vice-President, and," and replace "Board of Directors" by "Council." Article II is made to read as follows:

"ARTICLE II. *Committee on Place of Meeting:* At the final session held during the annual meeting of the Association, the Chairman of the House of Delegates shall appoint a Committee on Place of Meeting consisting of five members, whose duty it shall be to consider invitations, which may be received during the next year, and to report to the next annual meeting with respect to the place of the annual meeting following. The report of this committee shall be received and acted upon at the second session of the House of Delegates."

In Chapter VI, 6th order of business replace "Poard of Directors" by "Council." In 4th line of Article I, Chapter III, place a period after By-Laws, and delete the words "or with any rules adopted by the house."

Chairman Walton stated that the report will be accepted and in accordance with the present By-Laws go over to the next session, when they will be brought up for consideration.

Resolutions were presented and referred to the Committee on Resolutions. An informal discussion relative to the advisability of having an open meeting for considering resolutions, resulted in no action.

Director Robert P. Fischelis of the Drug Trade Bureau of Public Information presented a report on the publicity results of the past year. He explained the workings of the Bureau and the development—eight national organizations contribute to the expenses and make the results possible—the American Pharmaceutical Association contributes $200 to the fund of $1300, annually. Since January 1, 32 bulletins had been issued, he said; "These cover a wide range—some relate to commercial matters, others to professional subjects." The Director brought with him for exhibit the results of several bulletins which were shown—one responsive to the National Conference of Pharmaceutical Research, another followed the award of the Remington Honor Medal to George M. Beringer, another related to the article by Dean Jordan presenting the professional status of pharmacy—see June JOURNAL A. PH. A., p. 556—and the other quoted an Editorial of the *N. A. R. D. Journal* on "The Drugless Drug Store." Possibly the most striking of the results was that relating to the Remington Honor Medal—a photograph accompanied the bulletin and a copy of this was used by most of the papers from which clippings were taken. The value of the publicity is evidenced, in a way, by the number of papers from which clippings were shown; the top layers of these were taken from papers of about 14 states, and several times that number of cities, reaching out to the Pacific coast, the western and northwestern states, those of the south and southwest, New England and eastern states.

Chairman Walton thanked Director Fischelis for his interesting report.

Jeannot Hostmann moved that the House of Delegates recommend to the Board of Directors continued support and appropriate the usual annual contribution—the motion was seconded and carried.

The Committee on Nominations by its Secretary, H. M. Whelpley, submitted the list of candidates as follows—for President, the three names: W. L. Scoville of Detroit, Mich., L. L. Walton of Williamsport, Pa., Charles W. Johnson of Seattle, Wash.; for Directors, the nine names: H. C. Christensen, Chicago; Samuel L. Hilton, Washington; W. Bruce Philip, San Francisco; Julius A. Koch, Pittsburgh; Theodore J. Bradley, Boston; Charles W. Holton, Newark, N. J.; H. M. Faser, University, Miss.; Walter M. Chase, Detroit; E. A. Ruddiman, St. Louis. Of the former, one is to be elected by ballot, of the latter, three are to be chosen. The report was signed by all members of the committee.

Charles J. Clayton moved acceptance of the report; George M. Beringer inquired whether consideration had been given to the proposed amendment which provides for a First Vice-President and for a Second Vice-President; James H. Beal suggested that the mover modify his motion to read, that the report be approved and the Committee continued for the purpose of bringing in additional nominations, if present contemplated changes in the By-Laws make such nomina-

tions necessary. Mr. Clayton accepted the suggestion and the motion was accordingly adopted by vote.

The Chairman recognized Mr. Newcomb, who spoke in part as follows: "You will recall there was considerable discussion at Asheville relative to promoting some publicity work along the lines of that which has been carried out successfully in a number of states, especially in Ohio and in the Northwest. The resolution which was passed, No. 12, read as follows: *Resolved*, that the A. Ph. A. extend to its members during the coming year additional service, such service to consist of news bulletins or other material which will be of direct value to the retail pharmacist and to be sent out at least once a month.

"This entailed the expenditure of some money. The Board of Directors authorized the expenditure of, I believe, a sum not to exceed $1000 for work of this character. The actual carrying out of the work was delegated to the House of Delegates to a Committee of which I was asked to serve as Chairman.

"As you all know, I have been exceedingly busy with publicity work and I feel confident that American pharmacy has accomplished much along the lines of publicity during the past year through the headquarters campaign. During the coming year the Directorhopes to incorporate, in some of this headquarters publicity work, material in the form of bulletins which will carry our message to the public and help the pharmacists as well as ourselves.

"I merely wanted to make it clear, Mr. Chairman, to the delegates that we do not pass resolutions and then bury them forever. Some work is being done here on this project and during the next year I am sure that much more will be accomplished."

Mr. Newcomb asked that his remarks be accepted as a report of the Special Committee on Publicity Bulletins. It was so voted.

The report of the Committee on National Legislation was read by Robert P. Fischelis, a member of the Committee. He stated that the report had been signed by Chairman A. R. L. Dohme and John C. Wallace; other members of the Committee were Messrs. DuMez, Fischelis and Eberle. The report concluded with a resolution and after some discussion the report was referred to the Committee on Resolutions.

Chairman Wilbur L. Scoville presented the report of the Committee on National Formulary. After some discussion it was referred for consideration and discussion to the Section on Practical Pharmacy and Dispensing.

The report of the Committee on Standards was read by Secretary Day; it follows:

REPORT OF THE COMMITTEE ON STANDARDS.

Following out the policy mentioned in the last previous report, your Committee on Standards has done no active work during the past year, many of the members still being engaged in similar work on the Committee of Revision of U. S. P. 9 and N. F. 4.

Attention is called to the fact that numerous vacancies have occurred in the ranks of the Committee due to expiration of terms. Following is a list of members whose terms expired: Elmer E. Wyckoff, J. A. Koch, L. D. Havenhill, E. L. Newcomb, Henry Kraemer, Eustace H. Gane, W. A. Puckner, B. L. Murray.

The Committee has sustained a sad loss through the death of one of its members, Dr. John M. Francis.

New appointments are in order.

None of the funds available for the Committee have been spent.

B. L. MURRAY, *Chairman.*

Chairman Walton stated that unless there was objection the report would be accepted and placed on file. He expressed the hope that next year reports of Committees would be signed by a majority of the members of the respective committees.

The Secretary stated that another standing committee is that on U. S. Pharmacopœia; the Committee on Pharmaceutical Syllabus reports to the Section on Education and Legislation; the Committee on Ebert Prize reports to the Scientific Section; the Committee on Pharmaceutical Research is to report to the House of Delegates.* Chairman H. V. Arny presented the report and

* This report, in part, entered into the minutes of the General Sessions and of Council and is embodied also in the October report of research activities, pp. 932–934.—EDITOR.

requested the House to recommend to the Board of Directors that the Association reaffiliate with the Research Conference and provide the necessary annual dues. The report was accepted and referred to the Board of Directors.

Secretary Day made a verbal report for the Committee on Membership, as follows:

REPORT OF THE COMMITTEE ON MEMBERSHIP.

"The Committee on Membership has not been inactive during the year, but its work has been somewhat over-shadowed by the work of the Committee on Headquarters Building. We have felt it unwise to attempt any general effort to secure members by letter as was done last year for fear of confusing the issue with the headquarters building campaign, but we have worked as individuals and through the colleges and the branches and the state associations and we have secured a very fair number of members, not so large as the number secured last year but neither have we spent so much money. We have secured and elected so far this year over 600 members who have paid the membership fee. We also have the applications of nearly 200 members who are entitled to free membership for a year because they have subscribed at least $25 and paid in at least $5 toward their subscription for the headquarters building fund. We are therefore able to report the accession of virtually 800 new members as compared with about 1060 of about a year ago.

"These results have been secured at a very small outlay of money and we will still, no doubt, elect more during this meeting. In fact, I received this morning about 15 applications through the mails, so that I feel the Membership Committee is working.

"Our membership now has reached a total of about 4200 and has made substantial growth during the past year. We believe that with the increased incentive of the headquarters building, the interest taken in this project and the probable accession of some five or six hundred more, possibly a thousand more, contributors to the membership, we shall be very well repaid for our efforts.

"I noted with a good deal of pleasure that one of our contributing members—I thought it rather remarkable—a member who contributed $500 toward the building and was not a member of the Association at the time that he made this contribution, was one of the first to send in his application for membership under this free provision. He followed this up by coming to the convention. He is here with us. I think that shows praiseworthy interest."

It was ordered that the report take the usual course.

Secretary Day read the names of special committees and Chairman Walton asked that the reports which were ready be presented at this time, thus relieving later sessions.

Chairman H. M. Whelpley reported for the Committee on Endowment Fund that "in view of the work being done for the headquarters building it would be unwise to undertake an active campaign at this time; this idea was brought before the Board of Directors, and concurred in."

Chairman William C. Anderson, of the Committee on Health Insurance, reported that no legislation bearing upon health insurance had been proposed during the past year; "this is the second year," he said "that the Committee has had no work," and therefore, he recommended that the Committee be discontinued.

The foregoing reports were accepted, and the motion by W. C. Anderson that the Committee on Health Insurance be discontinued was seconded by Jacob Diner, and carried.

James M. Doran, head of the Industrial Alcohol and Chemical Division at Washington, was introduced.

He referred to the assistance given by James H. Beal as a member of the Internal Revenue Alcohol Advisory Trades Committee, and remarked that no association representing any branch of pharmacy had taken a better stand than the American Pharmaceutical Association.

J. H. Webster asked whether the enforcement of the 18th Amendment as it applies to pharmacy would be better conducted under the provisions as proposed by the Cramton Bill than under present conditions.

Dr. Doran said the Cramton Bill is largely an organization measure, as to how the business may best be conducted within the Treasury Department. He considered organization as a matter of detail. "After all, if you do not have fair administration," he said, "I do not care how you are organized, you are going to suffer."

Mr. Philip asked if provision had been made for renewal of permits for application after August 30.

Dr. Doran said that the present regulations provided a very much shortened and easier method of renewing annual permits than heretofore. The renewal procedure has been simplified, requiring only simple statement by way of application for renewal, to the effect that the permittee desired his permit renewed for the ensuing year on the same terms as the present year. The regulations do not require such a renewal application where an "H" permit only is held.

Mr. Winter asked relative to a method of procedure in Ohio, which Dr. Doran did not specifically answer in the absence of detailed information. Mr. Wetterstroem asked if there is any limit to the amount of alcohol that can be withdrawn if adequate bond is deposited. Dr. Doran replied that all of these questions are "nutcrackers" in the Department. "The Commissioner's office has always held," he said, "that they have discretionary power to issue a permit only for what appears to be reasonable and legitimate, but it has been denied in some quarters. The law does not specifically inform and there has been no clear court ruling on the subject."

Mr. Wetterstroem asked whether Dr. Doran would construe 30,000 gallons withdrawn every three months by an extract company as reasonable. "That is a lot of extract," Dr. Doran said, "whether it is excessive would have to be determined from all facts in the case; for some firms it would be far too much. Some manufacturers require that much, and more."

S. L. Hilton reported as a delegate to the National Drug Trade Conference. The minutes of the Conference meetings have been published in the JOURNAL.*

R. S. Lehman, member of the delegation from the American Pharmaceutical Association to the twenty-fifth annual meeting of the National Association of Retail Druggists, presented a comprehensive report of the convention, held in Boston, Mass., September 24–28, 1923. To the report were appended the President's Address, reports of the Executive Committee, of the Secretary, of the Treasurer, of the Legislative Committee, of the Committee on Resolutions, the resolutions adopted, of the Committee on Trade Interest, general program, and the address by Dr. James H. Beal on "The Force Behind the Law."

The report gave an account of the meeting, in abstract. The reporter dwelt on President Gladding's reference to the important meeting of the executive committees of the N. A. R. D. and A. Ph. A., in which he stated that such conferences would bring about valuable coöperation.

Chairman Walton thanked Mr. Lehman for the comprehensive report of the N. A. R. D. convention.

The second session of the House of Delegates was then adjourned.

THIRD SESSION.

The third session of the House of Delegates was called to order by Chairman L. L. Walton at 4:00 P.M., Thursday, August 28.

The minutes of the second session of the House of Delegates had been presented at the General Session, just adjourned, therefore, the Chairman stated, unless there was a request the minutes would not be read at this time. There was no request.

Secretary Day read the report of the Committee on Physiologic Assaying; it follows:

Every member of the Committee on Physiologic Assaying, A. Ph. A. is either directly or indirectly assisting in the compilation of the chapter on Biologic Assaying of The United States Pharmacopœia. In view of this fact your chairman, this year, did not ask the members of the committee to carry out any coöperative experiments. Therefore, the committee has no formal report to offer.

PAUL S. PITTENGER, *Chairman.*

The report was accepted.

A motion was adopted to refer the report of the Committee on Patents and Trademarks to the Publication Committee, after being read by title.

Chairman E. F. Kelly read the report of the Committee on Constitution and By-Laws, of the House of Delegates. The Amendments were read seriatim and approved as read. The only changes made to the amendments offered at the preceding section of the House of Delegates are the following:

Article II, Chapter V, 4th line, replace word "balloted" by "acted." Tenth order of business, Chapter VI, was amended to read: "10. Nomination of officers of the Association to

* January JOURNAL A. PH. A., 1924, pp. 87–90.

be elected by mail ballot, and election of officers of the Association upon nomination by the Council."

A motion of W. C. Anderson, seconded by H. M. Whelpley, to adopt the By-Laws as a whole, as amended, was carried without a dissenting vote.

Chairman Kelly moved—That all previous By-Laws adopted by the House of Delegates be repealed, and that a statement to that effect shall appear at the conclusion or other conspicuous place in the publication of these By-Laws.

George M. Beringer seconded the motion and it was so voted, unanimously.

Chairman Walton thanked Chairman Kelly and the other members of the Committee for the splendid work in shaping these By-Laws, which he said, would materially assist the incoming officers.

The report of the Committee on Local Branches was presented:

REPORT OF COMMITTEE ON LOCAL BRANCHES, A. PH. A.

The Committee on Local Branches was originally designed "to stimulate and assist in the formation of Local Branches." Later its functions seemed to change to that of keeping the spark of life burning in those branches existent.

The chairman of this committee has now operated in that capacity for a period of five years. For several years the Committee did real work to justify its existence. More recently it has not been very active, due mainly to the quiescence of the chairman, who at this time is loth to state that he has found it difficult for a Committee representing the Association to function in this capacity. It is extremely difficult except in few instances to elicit any assistance or coöperation from officers of the Branches, in distant centers. Such branches as do function in accordance with the By-Laws are well able to care for themselves both as to their program and other problems.

It is not impertinent to point out that out of the branches now on our records only one-half of this number have operated so as to entitle them to continuation and to certain privileges which accrue to the active branches.

Your committee, therefore, regrets that it has no report of progress and specifically recommends that a new chairman be appointed for the new year.

Respectfully submitted,

IVOR GRIFFITH, *Chairman.*

The report was accepted; Chairman Walton stated that the matter of appointing the Committee for next year was in the hands of the incoming officers.

Heber W. Youngken reported verbally for the Committee on Horticultural Nomenclature. He stated that the book of standardized plant names had been published and for the present there was no work for the Committee.

In submitting the report of the Committee to Draft a Code of Regulations for the sale of Poisons, Chairman Jacob Diner said that it was not presented with a view of acting on it at this time, but with a view of bringing out discussions and suggestions.

REPORT OF COMMITTEE TO DRAFT A CODE OF REGULATIONS FOR THE SALE OF POISONS.

At the Asheville meeting your Committee submitted a preliminary report on this subject in the hope that the discussion would bring out some points which would assist the Committee in formulating regulations which would safeguard the health and life of the people without imposing unnecessary hardships on the pharmacists. Unfortunately few, if any, suggestions or criticisms were offered. The greatest difficulty experienced by your committee was, and still is, to find a clear-cut definition as to what is a "Poison." In order, therefore, not to create any doubt or uncertainty in the mind of a seller whether a certain article comes under the head of a poison or not, we felt the best solution of the problem is to adhere to the old classification of Schedules A and B, and then enumerate in each class all the drugs belonging therein and the precautions to be observed in the sale of a drug belonging to the respective group.

To accomplish this your Committee has carefully studied all the poison laws available, by obtaining copies of the laws from most of the states and including every drug mentioned in these state laws under the proper classification.

RULES GOVERNING THE SALE OF POISONS.

It shall be unlawful for any one not duly licensed to practice the art and science of Pharmacy to sell any of the articles enumerated in Schedules A and B unless such articles are sold in packages of *five* pounds or more, if solid, or four pints or more if liquid, in original sealed containers put up by a manufacturer of drugs or chemicals, or by a recognized wholesale dealer, or by a licensed pharmacist. Such articles must contain on the label, plainly printed, the name or names of the contents, the word "Poison" printed in red, the names of two readily obtainable antidotes and the name and place of business of the seller. Nothing herein contained shall apply to the dispensing of physicians' prescriptions, nor shall it abrogate federal or state laws.

Register.—Every person who disposes of or sells at retail or furnishes any poisons included in Schedule A shall, before delivering the same, enter in a book kept for that purpose the date of sale, the name and address of the purchaser, the name and the quantity of the poison, the purpose for which it is purchased and the name of the dispenser. The "poison register" must at all reasonable hours be open for inspection by the proper authorities and must be reserved for at least five years after the last entry. He shall not deliver any of the poisons of Schedule A or B until he has satisfied himself that the purchaser is aware of its poisonous character and that the poison is to be used for a legitimate purpose. The provisions of this paragraph do not apply to the dispensing of medicines or poisons on physicians' prescriptions. The Board shall add to any of the schedules from time to time as such action becomes necessary for the protection of the public.

SCHEDULE A.

Arsenic and its preparations. Acids, all concentrated mineral acids. Atropine and its salts. Aconite and its preparations. Antimony and its salts and preparations. Apomorphine and its salts. Belladonna and its preparations. Barium salts. Brucine, benzaldehyde and bromine. Hydrocyanic Acid and cyanides. Chloral Hydrate. Chromine salts. Cotton Root, and its preparations. Cocculus indicus and its preparations. Cantharides, and its derivatives and preparations. Chloroform. Creosote. Conium and its preparations. Copper salts. Cocaine. Conium, its alkaloids, derivatives and preparations. Croton oil. Digitalis, derivatives, preparations. Dionine. Ergot, its derivatives and preparations. Ignatia and its preparations. Lobelia and its preparations. Lead salts. Gold salts. Hydroxides of Sodium and of Potassium. Mercury and its preparations, except mercurous chloride. Morphine, its salts and preparations, except as otherwise stated. Nux Vomica and its preparations. Oil of bitter almonds. Opium, its derivatives and compounds. Oils of savin, pennyroyal, tansy, rue, except as otherwise stated. Phenol (Carbolic Acid), Oxalic Acid. Phosphorus and its poisonous derivatives. Strychine and its salts. Stramonium and its preparations. Other drugs, not mentioned herein, which may become dangerous or injurious to human life or health in doses of two grains or less.

SCHEDULE B.

Alcohol, wood and denatured. Compound cresol solution. Cowage. Colchicum, Copper salts. Formaldehyde. Gelsemium, Nicotine, Hellebore, Henbane, Ignatia, Iodine and Tinctures, Lysol. Salts of lead and zinc; potassium permanganate, etc.

The report of the Committee on Pharmacists in Government Service was presented; it follows:

REPORT OF THE COMMITTEE ON PHARMACISTS IN GOVERNMENT SERVICE, A. PH. A.

Your Committee members individually have endeavored closely to follow the developments of the year in the pharmaceutical service of both the Army and Navy and four of the members have personally conferred over this report.

The Army.—In the Army, additional commissions have been granted pharmacists as reserve officers in both the Medical Administrative Corps, where the maximum commission is that of Captain, and in the Sanitary Corps, where pharmacists are being offered higher commissions.

One service rendered by the reserve officers during the year has been a survey of the pharmaceutical resources of the nation, available in time of war. This alone will be of immense value in time of emergency, because of its practical character, being conducted by those familiar with the large scale production. The Surgeon General of the Army is still inviting well-trained pharmacists

who can secure the endorsement of their Colleges, to apply for these commissions, and this Committee urges an immediate response by college teachers and others who are interested in the establishment of a genuine and representative pharmaceutical organization in the Army.

This Committee again emphasizes the importance of building this new army organization now and from those in the ranks of pharmacy best qualified to properly determine the scope of the service to be offered by highly-trained pharmacists.

The Navy.—The situation in the Navy has not materially changed during the year. The hoped-for initiation by the Surgeon-General of legislation to authorize commissions for pharmacists in the Navy has not materialized. That no bill was introduced into Congress does not, however, mean the absence of its consideration, but rather that those interested in such legislation did not consider the conditions propitious.

Two bills providing for the commissioning of navy pharmacists, through the establishment of a Hospital Corps within the Medical Corps, have been placed in the hands of your Committee, and are available here for examination and suggestion by anyone who is interested. These are similar in many respects and both recognize training in a recognized college of pharmacy as a qualifying factor, and both have the support of many members of the present naval pharmacists.

Admiral Stitt, Surgeon General of the Navy, again this year in his report to the Secretary of the Navy, has recommended that provisions be made for commissions to pharmacists, so that your Committee recommend that they, working through the Legislative Committee, be given discretionary power, to secure the introduction into Congress, and passage, if possible, of such legislation.

We are not sure that this year will offer suitable conditions for promoting such legislation, but ask for the endorsement of this Association, should it be found practicable to do so.

Copies of the bills which have been prepared are available, and any one who is interested is invited to give them careful examination and suggest improvements.

Your Committee has followed efforts for better recognition of pharmacists in the Public Health Service, and the War Veterans' Bureau, but have not considered it wise to participate in any movement proposed.

Respectfully submitted,
E. FULLERTON COOK, *Chairman*,
REDMOND MAYO,
ROBERT P. FISCHELIS,
CLYDE L. EDDY.

Chairman Cook moved adoption of the report with its recommendations, seconded by W. C. Anderson.—Carried.

The report of the Committee on International Pharmaceutical Nomenclature was presented, it follows:

To the Members of the American Pharmaceutical Association:

Your Committee on International Pharmaceutical Nomenclature desires to report progress.

For some years past the Committee has been trying to determine just where it should begin in its labors in order to obtain the best results and to establish points of contact with others having the same purpose in view. As a result, the conclusion has been reached that it would be most advantageous to the Association to work with the Federation Internationale Pharmaceutique. This international body has already done considerable work with respect to securing uniformity in pharmaceutical nomenclature and one of its members has requested that our Committee submit a set of general principles which in our opinion should be followed.

The Committee expects to take up the formulation of such a set of general principles in the near future and will no doubt have something more definite to report next year.

Signed:
HORATIO C. WOOD,
ARNO VIEHOEVER,
A. G. DUMEZ.

The report was accepted.

Chairman Walton stated that the program called for a report of the Committee on Headquarters Building, Dr. J. H. Beal, Chairman.

Chairman Beal explained that at the December Meeting of the Board of Directors, now Council, the very generous offer of Dr. H. A. B. Dunning was accepted to organize a special campaign committee. He gave credit for the work to him and his very able associates, Professor Newcomb and others, and said that he had requested them to present the report; his work of the year had largely been directed to encourage appropriations, particularly from state associations.

Chairman Dunning of the Headquarters Campaign Committee presented his report in abstract—it is printed on pp. 860–864, September JOURNAL A. PH. A.

Chairman Walton stated that the report was made to this body as a courtesy. He said further, that it was his privilege to hear Dr. Dunning outline the campaign plan before the meeting of the Board of Directors in Washington and was favorably impressed and commended acceptance of the offer. He now felt it was a move in the right direction and in order for the House of Delegates to assure the Campaign Committee that the members will continue to give the fullest coöperation until the goal is reached.

E. L. Newcomb, being called upon, said that part of what he would now say was a repetition of his remarks before the National Association of Boards of Pharmacy. "It was up on Mount Mitchell, last year, that this headquarters campaign was started," he said. "It was while taking that last mile climb that a man came to me and said, 'I want to talk to you about a matter that I have had in my mind for several hours. I have a scheme, a scheme which I think will be a very great benefit if carried to American Pharmacy.' And this man unfolded before me some plans, and as we neared that summit and stood there gazing over that wonderful country, the land of the blue sky, this man saw American Pharmacy as it actually exists to-day. He saw way out here the manufacturers in pharmacy, four great organizations, the American Drug Manufacturers' Association; he saw the Association of Manufacturers of Medicinal products, the Proprietary Association, the United Drug Manufacturers' Association; and then over in another direction he saw the National Wholesale Druggists' Association, and the Federal Wholesale Druggists' Association; and then over here the National Association of Retail Druggists, the largest group of all. He saw the National Association of Boards of Pharmacy, the American Conference of Pharmaceutical Faculties, the National Association of Drug Clerks. In other words, he saw ten great national organizations in American Pharmacy, each of them carrying on important work, each of them sincere, earnest, endeavoring to do something for the betterment of American Pharmacy.

"Here and there he saw conflicts instead of real coöperation between the branches of American Pharmacy. He saw that progress was hindered because there was not full coöperation. And he saw that all of these organizations were talking about a headquarters building. He could see back into the histories of those associations. He could see what those men were thinking of.

"And then under the inspiration which every man has in a position of that kind, he said, 'The one thing which American Pharmacy needs is a headquarters building which will serve as a means of bringing about real coöperation between American Pharmacy.' And that man, gentlemen, was Dr. H. A. B. Dunning."

"This project is unquestionably the most important which American Pharmacy has ever been engaged in, and I do not exempt the U. S. Pharmacopœia, and the work on the National Formulary. I do not exempt our work in creating these ten national associations, in establishing the state associations, nor any of the big things of American Pharmacy which have been done by the American Pharmaceutical Association!

"Organization work in this country is not yet complete. We have developed organizations where they were needed, as the occasion has arisen. And these have served their purpose and served it well, but we have reached a point in the progress of American Pharmacy where our organization activities must be carried further. This entire project is more than accumulating some brick, steel and cement—it is for bringing together the drug interests of this country.

"Do not misunderstand me. I do not mean that these national associations are to be eliminated and that we will simply have one association. No! But there should be correlation so that each will help the other, and will accomplish results through this combined force which is impossible by individual endeavor.

"The American Pharmaceutical Association at one time represented all of American Pharmacy adequately. When the American Pharmaceutical Association was first organized it did represent all of American Pharmacy. Different branches of pharmacy, however, were developed,

different lines of activity, and the A. Ph. A., unfortunately did not function so as to serve each of the activities, and to-day we have these separate groups.

"The American Pharmaceutical Association, in a sense, does represent all of these activities at the present time, and now that it is reorganized it represents the different branches of pharmacy more effectively, more efficiently, than ever before. We have the college professor and the loyal retail pharmacist who stood by the A. Ph. A., and the laboratory men from the manufacturing establishments and some of the wholesalers to thank for keeping the American Pharmaceutical Association alive, strong, healthy and vigorous, and the only association which can possibly carry on this work and is in a position to do so.

"There is some misunderstanding relative to this undertaking because of the misbelief that this is a move to bring about a consolidation, actually, of the funds of these different national associations. Nothing of the kind is true. When American Pharmacy comes to understand the opportunity of bringing about coöperative work along the lines suggested we can raise $5,000,000 in six months.

"Please, each and every one of you, go away from this meeting determined that you will give support to this great enterprise. That does not mean simply to hand in your subscription. That is one of the smaller but essential parts of the work to be done. It means that you must go home determined to make some sacrifice from your own work, determined possibly to give up a game of golf or a theater party and spend that time to interview influential men in American Pharmacy, to give them a thorough understanding of this proposition, to get their whole-hearted support in order that we may carry on this work and complete the goal.

"We need workers—that is what we need to put this over. With workers, with men who have their soul in the project, we will come to our convention next year with the sum of $1,000,000 raised."

Chairman Dunning recalled that Professor Newcomb had made him see a great vision. "I wish it were true," he said. "I didn't see that vision, but I did see the opportunity to bring to a consummation the vision of many other men before me. I think you all know well the names of the various men associated with this body who have seen the vision that the speaker was so kind to have attributed to me, but my work has been to put that vision into form, to materialize that vision. I saw the opportunity to materialize it, and that is what I have been doing, but I didn't do the other very grand thing."

Chairman Walton replied that Professor Newcomb should not be robbed of the license that makes that story so beautiful.

James H. Beal moved that after a discussion of the report, it be referred back to the Council. He also very gladly accepted an amendment to the motion by Jacob Diner, that deep appreciation be expressed for the work of Dr. Dunning and Prof. Newcomb and others of the Committee.

Chairman Walton stated that the motion before the House was to refer the report back to the Council with such suggestions or recommendations as it may be desired to make and express our thanks to the committeemen for their splendid address and explanations made here this afternoon. There being no further discussion the vote was called for, and motion carried.

Chairman Jeannot Hostmann read the report of the Committee on President's address.*

REPORT OF THE COMMITTEE ON PRESIDENT'S ADDRESS.

To the Chairman and Members of the House of Delegates:

Your Committee on Resolutions and President's Address begs to report as follows:

President Arny, in his address made three recommendations and five suggestions all of which have been carefully considered by your committee.

THE PRESIDENT'S ADDRESS.

Recommendation Number One.—"I recommend that at this 1924 meeting, the first order of business of the final General Session of the Association be the awarding of prizes and the installation of officers, said functions not to take more than thirty minutes." It is the opinion of your Committee that the method suggested by President Arny will add dignity to the awarding of

* The names of the members of the Committee given on p. 804, September JOURNAL A. PH. A., should also include Linwood A. Brown and D. M. Cowan; they were obliged to leave before the work of the convention was completed.

the Ebert Prize and the Research Grant, as well as the installation ceremonies. It will also make it possible to set a definite time for the above mentioned functions, which is not possible under present arrangements. Your Committee approves the recommendation and favors its adoption.

Recommendatiou Number Two.—"I recommend that the Committee on Publication be authorized to proceed to a speedy publication of the Recipe Book this authorization to include the securing of the proper person to perform the editorial work needed to convert the report of the Committee on Recipe Book into the finished volume."

The work of compiling, collecting and selecting the material for the Recipe Book has been done by volunteers. When published it will undoubtedly have a ready sale and should become a source of revenue. Your Committee is in agreement with President Arny that it would neither be fair nor satisfactory to do the editorial work otherwise than as suggested.

Your Committee recommends concurrence.

Recommendation Number Three.—"I recommend that the A. Ph. A. reaffirm the stand taken by it in 1921 (JOURNAL A. PH. A., 10, pp. 668, 1921) advocating the establishment of Government agencies handling alcoholic liquors."

Recommendation No. 3 was very carefully discussed by your Committee. Whisky and Brandy have been readmitted into the Pharmacopœia. Many reputable physicians consider both as valuable therapeutic agents. Your Committee believes that the proper place for the sale of medicine is in the pharmacy. Furthermore, while the sale of whisky and brandy was forced upon the pharmacist, it is questionable whether a so-called "dispensing" system might not bring with it still more unsatisfactory conditions.

Your Committee reports unfavorably upon Recommendation No. 3.

Suggestion Number One.—Your Committee believes that the thought expressed by the President is a very happy one and offers the following:

1. *Resolved*, that the Board of Directors (Council) be directed to utilize the income from the "Centennial Fund" for the striking of a medal to be known as the "Centennial Medal," to be awarded annually or otherwise for meritorious work along special pharmaceutical research lines.

2. *Resolved*, that the Committee on Pharmaceutical Research shall be charged with the details of the award of said medal.

The other four suggestions made by the President referring to the Ebert Legacy Fund, the Ebert Prize, Bringing the YEAR BOOK up to Date and the Scope of the A. Ph. A., were given careful consideration. Your Committee did not think it wise to act upon them.

To avoid useless repitition your Committee, with the consent of the President, has omitted the suggestions from this report.

Respectfully Submitted,

AMBROSE HUNSBERGER, GEORGE JUDISCH,
B. L. MALTBIE, D. B. R. JOHNSON,
F. W. MEISSNER, THEODORE D. WETTERSTROEM,
JEANNOT HOSTMANN, *Chairman.*

Jacob Diner moved that the report of the Committee be received and the recommendations acted upon seriatim.—Carried.

The several recommendations and suggestions were separately read, freely discussed, and acted upon—the results are also given following the President's address in the September JOURNAL A. PH. A., pp. 804–805. (The discussion relative to the recommendations and suggestions was brief; the vote was unanimous as carried, except for recommendation three, which was carried by a two-thirds vote.)

George M. Beringer moved that the report of the Committee on President's Address, as amended, be approved and adopted as a whole. Seconded by W. C. Anderson.—Carried.

Chairman Hostmann asked for instructions—"There have been offered to me," he said, "several resolutions and I have refused them. My understanding is that the Committee on Resolutions has no right to consider any resolutions, except such as are handed to the Chairman by the Secretary of the House of Delegates."

Chairman Walton replied that "all resolutions to be considered by the House of Delegates should be offered in open session, in writing, duly signed by the authorities and by the House referred to the Committee on Resolutions. The Chairman of the Committee is not responsible and

should not consider resolutions which are not offered in that manner." In further reply to others the Chairman stated that at every session an opportunity for the presentation of resolutions had been given. Resolutions are wanted, they should be read in open meeting so the members can be thinking about them and be prepared to discuss the report of the Committee on Resolutions.

Theodore D. Wetterstroem, referring to the report of the Committee to Draft a Code of Regulations for the Sale of Poisons, said it occurred to him that it would help in the matter of prosecution on poison cases, conducted by Boards of Pharmacy as a rule, if there was a definition of "poison" incorporated in the U. S. Pharmacopœia; that such a definition would then become of legal standing and would assist in the prosecution by the Boards of Pharmacy. Possibly a suggestion of that kind to that Committee when it does complete such a definition could be carried into effect.

Chairman Walton was confident that the members of the Committee would welcome suggestions that will make their work of greatest value to pharmacists. Everyone should give the subject thought and confer with the Committee, the report will probably not be completed for several years.

Fourth Session.

The final session of the House of Delegates, A. Ph. A., was convened by Chairman L. L. Walton at 3:30 P.M., Friday, August 29.

Secretary Wm. B. Day read the minutes of preceding session.

E. L. Newcomb referred to the action on Recommendation Three of the President's address which resulted in the adoption of the committee's report, and Jacob Diner noted that Recommendation Four of the minutes was only a suggestion of the President. The Secretary stated he had not the report of the Committee and corrections would be made accordingly when the report was returned to him.

The minutes were approved as corrected.

Chairman E. L. Newcomb, of the Committee on Nominations for officers of the House of Delegates, reported the following nominees: For Chairman, W. Bruce Philip, of California; Vice-Chairman, W. D. Jones, of Florida. The report, he stated, was signed by all members of the Committee, except the fifth member, who had left for home, but had concurred in the nominations.

James H. Beal moved that the nominations be closed. The motion was duly seconded and carried.

The supplementary report of the Committee on Nominations for Association officers was called for. The Secretary of the Committee, H. M. Whelpley, reported three nominations for First Vice-President: William C. Anderson, of New York; Fred W. Meissner, of Indiana; Frank G. Schachleiter, of Arkansas; for the three nominees for Second Vice-President: C. J. Clayton, of Colorado; Clyde L. Eddy, of New York; John G. Beard, of North Carolina.

R. S. Lehman moved, seconded by Samuel L. Antonow, that the nominations be closed.—Carried.

Secretary Day read a communication from the Board of Directors to the House of Delegates; it reads:

To the House of Delegates:

Following the recommendation of the House regarding the Recipe Book, the Council has adopted the following motion:

1. That Prof. Ivor Griffith of the Recipe Book Committee, be appointed Editor of the Recipe Book and instructed to coöperate with Chairman Lascoff and the Committee on Recipe Book in preparing such book for publication.

2. That the sum of $1000 or so much thereof as may be required, if approved by the Finance Committee, be appropriated to cover the expense of said editing and of any further revision of the formulas that may be found necessary.

Robert P. Fischelis, *Secretary*,
Board of Directors.

Chairman Walton expressed the opinion that it is in order to accept this information and place it on file.—It is not for action by the House of Delegates, but Council business.

Various motions resulted through a misunderstanding of the purpose of the communication,

which came to the House of Delegates as a matter of information. The motion by Jacob Diner, seconded by D. B. R. Johnson, that the report of the Board of Directors be received, carried.

Chairman Walton called for reports from the Sections:

REPORTS OF THE SECTIONS. A. PH. A.

Scientific Section—Report by Secretary Paul S. Pittenger:

The Scientific Section held its regular sessions at 9.00 A.M. on Wednesday, Thursday and Friday, August 27, 28 and 29, respectively, and one Joint Session with the Section on Practical Pharmacy and Dispensing at 8:30 P.M., Thursday, August 28th.

All of the sessions were well attended.

A total of 43 scientific papers was presented followed by interesting and instructive discussions.

The section of the By-Laws limiting the presentation of papers to ten minutes with an additional ten minutes for discussion was strictly adhered to, with the exception of the paper by Dr. J. M. Kolthoff of Utrecht to whom an extension of time was granted by unanimous vote.

Equal opportunity was thereby afforded to all authors. The Section Officers feel certain that this procedure eliminated the dissatisfaction which was very apparent at many of our previous meetings when some authors were allowed very much longer time, after which, owing to the lack of time, others were unable to satisfactorily present their subjects.

An abstract of the more important "minutes of the Sessions" follows:

The first session was called to order at 9:18 A.M. August 27th, and was followed immediately by the reading of the Chairman's address.

The address was referred for consideration, with instructions to report at a later session, to a Committee composed of the following three members: Robert J. Ruth, Chairman; E. F. Kelly and A. G. DuMez.

This was followed by the Secretary's report which gave a brief outline of the preliminary planning and the methods employed for receiving papers and making arrangements for the program.

The Committee on Nominations was composed of: F. E. Bibbins, Chairman; H. Engelhardt and W. H. Zeigler.

The By-Laws of the Section were then revised in accordance with the revised By-Laws of the Association and referred to the Council for final action.

Twelve papers were presented at the first session followed by interesting discussion. These were all of such a high standard that it is impossible to impartially mention any selected number of outstanding ones.

The second session was called to order at 9:15 A.M., August 28th.

The entire session was devoted to the reading of papers and the reading of the Report of The Ebert Prize Committee.

Ten extremely interesting and valuable papers were presented followed by discussions of equal merit. Although all of the papers were of a high standard, special attention is called to the unusually exceptional papers of Messrs. Kolthoff, Beal and Giesy.

The special feature of this session was the masterly address of Dr. I. M. Kolthoff of Utrecht upon the subject of "The Concentration of Silver Ion Concentration of Argentum Proteinicum."

Professor Arny led the discussion. In addition to pointing out the value of Dr. Kolthoff's work, he expressed his surprise that such a voluminous list of research papers could have issued from the pen of an author so young. Also that he had the great pleasure of announcing that Dr. Kolthoff had been elected an Honorary Member of the A. Ph. A.

Dr. A. G. DuMez, chairman of the "Ebert Prize Committee" reported that the prize had been awarded to President Arny for his work on color standards, the last report of which was included in his paper entitled "The Preparation of Color Standards and their Application."

Joint Session.—Scientific Section and Section on Practical Pharmacy and Dispensing.—This meeting was called to order at 8:20 P.M., August 24th, and was devoted to a Symposium on U. S. P. and N. F. after which Dr. J. C. Munch of the Bureau of Chemistry, U. S. Department of Agriculture, presented a paper setting forth the plans, program, etc., for supplying standard samples to the manufacturers, of the various drugs which require biologic assay.

Chairman J. P. Snyder presided during the discussion of the United States Pharmacopœia and the reading of Dr. Munch's paper and Chairman Robert J. Ruth presided during the discussion of the National Formulary.

The "Report on the U. S. Pharmacopœia" was presented by Chairman E. Fullerton Cook.

The "Report on the National Formulary" was presented by Chairman Wilbur L. Scoville.

The third session was called to order at 9:15 A.M., August 29th, by Chairman J. P. Snyder. The reading of papers was at once continued. Fifteen papers were read and discussed. Three papers were read by title. The papers of all sessions were accepted and referred for publication.

The Committee on Nominations reported the following nominees: *Chairman*, Paul S. Pittenger; *Secretary*, F. F. Berg; *First Vice-Chairman*, John C. Krantz, Jr.; *Second Vice-Chairman*, E. V. Kyser; *Delegate* to the House of Delegates, J. P. Snyder.

Dr. Arno Viehoever presented the report of the Committee on Quality of Medicinal Products. Robert J. Ruth reported for the Committee on Chairman's Address, and moved that all recommendations contained therein be adopted. The motion was carried.

It was moved by A. G. DuMez, received and carried that the Chairman of the Committee on Nominations cast one ballot for the election of the officers nominated.

Chairman J. P. Snyder installed the new officers who in turn expressed their appreciation to the Section for the confidence placed in them and pledged themselves to do all in their power to prove themselves worthy of the honor.

Section on Historical Pharmacy.—Report by Chairman Clyde L. Eddy:

The principal work of the Section on Historical Pharmacy this year was a discussion of the chapter that had been completed of the history of American Pharmacy. Five or six of the chapters have been presented in the preliminary draft and reports were made by some of the other officers.

On suggestion of the Chairman, the entire editorial board of this proposed history was constituted a committee to carry on the work, which will be continued until the history is completed.

The Section program will now go forward as it has in the past. Robert S. Lehman has been elected *chairman* of the Section, and Caswell A. Mayo as *delegate* to the House of Delegates.

Chairman Walton thanked Messrs. Pittenger and Eddy for their reports.

Section on Commercial Interests.—Reported by Chairman-elect W. Bruce Philip:

The Section on Commercial Interests followed the program, having the usual papers, and also having read before it one of the papers that was listed under the Section on Practical Pharmacy and Dispensing, this being a paper on window display and counter display. Responsive to a paper by one of the authors it was suggested we might have a Committee appointed by the proper authorities, either the House of Delegates or the Council, to endeavor to bring the sale of biologics and vaccines back into the drug stores instead of being sold by specialty houses and houses having non-registered pharmacists.

The Secretary suggested, this being a section on commercial interests, that the Chairman and the Secretary of this Section be selected from the convention city, and in that way bring the commercial affairs of the local druggists before this Section and the American Pharmaceutical Association as an aid to the local druggists and obtain memberships from among their number. This was referred back to the incoming officers with the suggestion that this year the associates come from the convention city, and if that was successful it might be that the plan would be adopted the next year.

The *Chairman* elected was the former Secretary W. Bruce Philip; and the *Secretary*, George Judisch, who is near the convention city, and *Delegate* to the House of Delegates, Henry B. Smith.

It was moved by W. Bruce Philip, seconded by D. B. R. Johnson, that the report be accepted and the recommendations therein approved.—Carried.

Section on Education and Legislation.—Reported by Secretary-elect J. G. Beard:

The Section was not well attended and not many papers were presented. The discussion was quite vigorous on the part of those who attended the sessions. It was decided to take active steps during the coming year to restore this section to its rightful place in the affairs of this organization and make it function as it was intended to function—make it be a real section on Education and Legislation—allow it to be and encourage it to be a medium through which and in which schools not having membership in the Conference might have opportunity to display their views on education; and also as a medium in which legislation could be discussed and acted upon.

The officers for the coming year are: *Chairman*, William Mansfield; *Secretary*, J. G. Beard; *Delegate* to the House of Delegates, M. N. Ford; *Associate*, David Simms.

Section on Practical Pharmacy and Dispensing.—Reported by Irwin A. Becker:

The last session of the Section is still in session; our joint session with the Scientific Section has been reported. Our attendance is good and we have 35 papers. The Chairman's address was so well received that the Section went on record urging the Committee on Publications to give this address as much publicity as possible.

The officers of the Section are: *Chairman*, John C. Krantz, Jr.; *Secretary*, F. J. Blumenscheim; *Delegate* to the House of Delegates, Robert J. Ruth.

Chairman Walton thanked Messrs. J. G. Beard and I. A. Becker for their reports. The former asked whether it was necessary that a committee appointed by a Section be referred to the House of Delegates for approval. In the opinion of the Chairman such action was not necessary.

Chairman J. H. Beal, of the Council, stated that a matter should be brought before the House of Delegates at this time, following the report of the Sections. He said, "the By-Laws under which the Association operated during the latter part of last year provided that the Chairmen of the sections should constitute the Vice-Presidents of the Association. That section of the By-Laws has been repealed. The By-Laws, as they will now operate for the annual election, provide for two Vice-Presidents, a First and a Second. These nominations have been presented to the House of Delegates and, if approved, will go upon the annual ballot, but the Vice-Presidents thus elected will not serve during the incumbency of our present President-élect. On the other hand, the terms of the Vice-Presidents who have served during the past year with President Arny have expired. We are without Vice-Presidents and without any machinery provided for their election, because if the two Vice-Presidents elected at the ensuing election be taken as Vice-Presidents for this year, then we will have two vacancies to fill next year. This is something that has come upon us by the changes made necessary by some rather hasty action at the last annual meeting at Asheville.

"After considering all of as many sides as possible of the situation and consulting with President Arny and with other authorities in the Association I have come to the conclusion, with which, I believe, all of those with whom I have consulted agree, that the reasonable thing to do is to assume that the First and Second Vice-Presidents of the present year who should be installed this evening and serve with President Holton should be the Chairman of the Scientific Section and the Chairman of the Section on Education and Legislation. And the reason I place them in that order, or that we have placed them in that order, is that in point of seniority the Scientific Section is the eldest and next to it comes the Section on Education and Legislation.

"Now this is brought to you for your advice and as an expression of opinion with the idea that when the question is raised to-night, as a parliamentary point of order in the General Session, we will be able to give the General Session and the President the benefit of our opinion.

"In order that this may be placed in regular form for discussion, I move, Mr. Chairman, that it be the sense of this House of Delegates that the First Vice-President to serve for the ensuing year should be the Chairman of the Scientific Section and that the Second Vice-President to serve during the ensuing year should be the Chairman of the Section on Education and Legislation."

The motion was seconded by W. Bruce Philip.—Carried.

Chairman Walton advised the Secretary to report the views of the House of Delegates to the General Session.

The report of the Committee on Resolutions was called for.

Chairman Jeannot Hostmann read a letter from the American Medical Association with an attached resolution.

The report of the Committee reads:

"*American Pharmaceutical Association:*

> I inclose herewith a copy of a resolution adopted by the House of Delegates of the American Medical Association, in June last. The House of Delegates records its objection to the National Prohibition Acts as they now stand and calls for remedial legislation. The matter is one of vital interest to pharmacists. I am writing, therefore, to inquire whether the American Pharmaceutical Association will coöper-

ate in the drafting of such legislation as is necessary to carry this resolution into effect.

I am writing letters asking similar coöperation from the National Wholesale Druggists' Association, the National Association of Retail Druggists, and the Anti-Saloon League of America.

(Signed) WM. C. WOODWARD,
Executive Secretary, Bureau of Legal Medicine and Legislation."

"*Resolution on the National Prohibition Acts, Adopted by the House of Delegates, American Medical Association, Chicago, June 10, 1924.*

"WHEREAS, The use of alcohol in medicine by physicians is limited, regardless of the condition of the patient by the National Prohibition Acts, and

"WHEREAS, the confidential relations maintained between the physician and his patient are violated by the said National Prohibition Acts, and

"WHEREAS, The interests of the patient and the success of the physician require that such medicinal alcoholic liquor as is prescribed in the treatment of disease be of known purity and alcholic content, and

"WHEREAS, This can be accomplished only by the marketing of bottled-in-bond alcohol for medicinal purposes in containers suitable for dispensing, unopened, by the pharmacist, in such sizes as will meet the patient's needs; be it

"*Resolved*, That the House of Delegates of the American Medical Association expresses its disapproval of those portions of the National Prohibition Acts which interfere with the proper relation between the physician and his patient in prescribing alcohol medicinally.

"*Resolved*, That the House of Delegates of the American Medical Association instruct the Board of Trustees to use its best endeavor to have repealed such sections of the National Prohibition Acts as are in conflict with the above resolution and also use their best endeavor to have the Commissioner of Internal Revenue and the Prohibition Commissioner issue revised instruction on the use and the prescribing of alcoholic liquors for medicinal purposes by physicians."

"Your Committee believes that it would be wise to instruct the Legislative Committee to coöperate with a similar Committee of the American Medical Association in legislative matters of mutual concern.

"Your Committee does not believe that this Association should coöperate along the lines suggested in the letter and enclosure. The stand taken by the American Pharmaceutical Association upon the liquor question is a matter of record. The pharmacist did not seek nor did he wish to become the dispenser of liquor as medicine. When it is so dispensed upon a physician's prescription it is to be regarded the same as any other substance used for the alleviation of disease. The pharmacist dispenses liquor as part and parcel of his duty in rendering pharmaceutical service to the people of this country. The restrictions placed upon the physician are his affair and not those of the pharmacist. Most pharmacists unwillingly perform the duty imposed upon them. Therefore, your Committee sees no reason why the A. Ph. A. should take any action looking toward any change in the restrictions limiting the amount of liquor a physician may prescribe."

"Your Committee desires to call your particular attention to the fourth paragraph of the submitted resolution, to wit: 'This can be accomplished only by the marketing of bottled-in-bond alcohol for medicinal purposes in containers suitable for dispensing, unopened, by the pharmacist, in such sizes as will meet the patient's needs.' "

"Your Committee considers this to be a gratuitous insult to pharmacy and believes that it calls for either retraction or explanation. Your Committee presents the following resolution:

"*Resolution No. 1.—Resolved*, that the Committee on Legislation be directed to coöperate with a similar body of the A. M. A. in legislative matters of mutual concern.

"*Resolution No. 2.—Resolved*, that the Secretary of the Council be directed to communicate with Mr. William C. Woodward of the Bureau of Legal Medicine and Legislation of the A. M. A. requesting an explanation or retraction of the wording of paragraph 4 of the resolution adopted by the House of Delegates of the American Medical Association.

"*Resolution No. 3.*—Your Committee recommends the adoption of the following: WHEREAS, it has come to the attention of the members of the American Pharmaceutical Association in convention assembled, that large volumes of alcohol are withdrawn by certain permit holders for the making of double strength tincture of ginger which in our opinion is many times more than needed for medicinal use by the people of this country, and

"WHEREAS, the withdrawal of such quantities of alcohol for such purpose is not in good faith and complying with the Federal prohibition law, Section 9; therefore, be it

"*Resolved*, that the members of the A. Ph. A. petition the prohibition unit of the Internal Revenue Department of the Federal Government to give this matter its serious consideration with the view of checking the misuse of this article by stopping its over-production at its source of supply."

A letter having been received from the American Fair Trade League requesting reaffirmation of the Association's stand on price standardization, your Committee offers Resolution number 4:

Resolution No. 4.—"*Resolved*, that the House of Delegates of the A. Ph. A. again approve the introduction and consummation of legislation placing into effect the principle of price standardization."

Resolution No. 5.—"Your Committee recommends the adoption of the following:

"WHEREAS, at a meeting of the state chairman engaged in the All Pharmacy Headquarters Campaign under the auspices of the American Pharmaceutical Association held in the city of Buffalo, August 27, 1924, the following was unanimously adopted:

"*Resolved*, that the General Secretary of the A. Ph. A. be directed to send a communication to each of the ten national drug associations expressing the hope that each will approve and become active in promoting the success of the All Pharmacy Headquarters building campaign now being conducted under the auspices of the A. Ph. A.; and be it further

"*Resolved*, that the Secretary be instructed to furnish a carefully prepared statement giving full information respecting the scope and purpose of this great project."

The report of the Committee on Legislation contained a recommendation to adopt the following resolution:

"WHEREAS, Congress has passed a law making it impossible to import any opium into the country for the purpose of manufacturing heroin, and

"WHEREAS, it is generally admitted by medical men and pharmacists that heroin is a desired and needed remedy for coughs and other pathological conditions; therefore, be it

"*Resolved*, by the American Pharmaceutical Association that it was a mistake to pass this law and that it should be repealed at the earliest opportunity."

Your Committee recommends that this resolution be laid upon the table.

(Signed) GEORGE JUDISCH, AMBROSE HUNSBERGER,
B. L. MALTBIE, D. B. R. JOHNSON,
F. W. MEISSNER, THEODORE D. WETTERSTROEM,
JEANNOT HOSTMANN, *Chairman.*

James H. Beal moved to proceed with the consideration of the report of the Committee seriatim. Seconded by S. L. Antonow.

There was some parliamentary discussion relative to the order in which the resolution of the American Medical Association should come before the House.

Mr. Beal stated that the resolutions of the Committee failed, in his opinion to cover two important points in the communication from the Bureau of Legal Medicine:

"First, rebuttal of the whereas which in effect declares that the only way in which the physician can be assured of procuring medicinal alcohol of proper quality is by virtue of its being dispensed in the form of what is known as 'bottled-in-bond' in containers of suitable size which need not be opened by the pharmacist before they are dispensed.

"Now we see here something that is not new or novel in the relation between medicine and pharmacy. We have seen our medical friends tell of infringement upon their prerogatives by virtue of the several prohibition acts, but entirely oblivious to the fact that pharmacy may also have interests that may be infringed upon. And I think they are distinctly infringing upon our rights when they adopt such a whereas, although I should in justice say that I believe it was done through inadvertence because pharmacy did not have a representative there to call attention to

that fact. So I would like to offer something in the nature of an addition to these resolutions, either to be added to the resolution offered by the Committee on Resolutions or to be incorporated in the resolution if the same should be redrafted."

"1. On general principles the A. Ph. A. objects to statutory enactments which tend to interfere with the judgment of qualified physicians in the treatment of their patients whether such interference consists in a limitation of the therapeutic agents which physicians may prescribe or to the quantities which they may prescribe when such prescriptions are made in good faith.

"2. This Association, however, does not subscribe to the statement that only 'bottled-in-bond' spirits are the requisite purity and quality, and desires to place itself on record as approving the standards of the U. S. P. and National Formulary as the sole standard that should be relied upon in determining the quality of alcohol and alcoholic liquors for medicinal purposes."

Chairman Walton held that the first resolution of the Committee must first be disposed of, and for the time, with the consent of his second, Mr. Beal withdrew his amendment.

Resolution No. 1 of the Committee was then adopted by vote.

Mr. Beal re-introduced his amendment as a substitute for the second resolution of the Committee, seconded by S. L. Antonow.

Discussion followed by Messrs. Antonow, D. B. R. Johnson, Diner, Bradley, Philip, Eddy, Chase, Beal and others. A vote was called for and the substitute resolutions were adopted.

Resolution No. 3 was read; motion to adopt was made by Theodore D. Wetterstroem, and seconded.

In speaking for the resolution, Mr. Wetterstroem said in part, "I wish to state that enormous quantities, 30,000 gallons, are being withdrawn by one firm every three months, the greater portion being used for making double-strength tincture of ginger. Other firms are withdrawing less quantities. These are matters of record and will not be challenged by the Prohibition Department. An estimate in Ohio is that over 200 times the amount of tincture of ginger used before the 18th amendment became effective is now being manufactured, and Ohio is no worse than some other states.

"We do know that these firms referred to are soliciting this trade through channels other than the drug trade, but through competition many of the druggists of our state are supplying the demand. I have every reason to believe that this whisky substitute will place a stigma upon the name of pharmacy, and for that reason alone I brought this resolution here and with the hope that when this is taken to the Prohibition Unit, permit division, they will have sufficient knowledge, the power, if you will, to determine whether they can refuse or revoke a permit of that kind. As stated to you yesterday, there is no legal limit to the amount of alcohol that can be withdrawn as long as the preparation prepared is legitimate."

W. C. Anderson expressed hearty accord with the purpose of the resolution but it should distinctly state that these firms were other than retail pharmacists. Pharmacy and pharmacists are too frequently and indiscriminately charged with violations of law.

I. A. Becker expressed similar views as preceding speaker.

Mr. Philip said: "I am heartily in favor of the spirit of the resolution, nevertheless there are one or two facts that we should consider. First, if that resolution is passed it is more than probable that the press will give this resolution as the publicity of the last day of the proceedings of the American Pharmaceutical Association. That will be carried all over the United States, and the good work that we are doing will find no place in the press. That must be considered. Also, the prohibition department publishes, I think weekly, a digest of information just like this and sends it to most of the papers of the United States for publicity, so that later this resolution would appear in most of the papers and would be interpreted to reflect on the local druggist."

H. M. Whelpley spoke along the same lines as Mr. Philip and expressed an opinion that it would be publicity for tincture of ginger.

Mr. Diner said if the Association would strongly support the protest of Chairman Cook of the U. S. P. Revision Committee before the Department at Washington against arbitrary changes in standards of U. S. P. preparations, it would aid in the correction of the sales under discussion.

Mr. Wetterstroem said the purpose of the resolution was not to save any manufacturer, whether pharmacist or not, doing this kind of business.

Robert P. Fischelis said that if the resolution cannot be revised to meet the views expressed here, it would be better to table the motion and he, accordingly, so moved, seconded by S. L. Antonow.—Carried.

Resolution No. 4 was read. Motion to adopt the resolution was made by Caswell A. Mayo and seconded by E. L. Newcomb.

Resolution No. 5 was read.

Considerable discussion followed participated in by Messrs. Beal, Mayo, Antonow, Newcomb, Whelpley, Day, Hostmann, Eddy, Philip, D. B. R. Johnson, Jelinek. The points of discussion centering on the term "All-Pharmacy" and the information relative to scope and purposes, to be sent to other organizations. An amendment was accepted by Messrs. E. L. Newcomb and H. M. Whelpley, read by Secretary Day, who said this amendment will make the resolution read as follows: "*Resolved*, that the Secretary of the American Pharmaceutical Association be directed to send a communication to each of the ten national drug associations expressing the hope that each will approve and will become active in promoting the success of the headquarters building campaign now being conducted under the auspices of the American Pharmaceutical Association for the purpose of purchasing a site, erecting and equipping a permanent headquarters building for the American Pharmaceutical Association and which will serve all phases of pharmaceutical interests."

The amendment was carried by vote and thereafter, the question presented for vote on the adoption of the resolution as amended.—Carried.

Chairman Hostmann read the resolution (No. 6) embodied in the report of the Committee on Legislation. Motion was made and seconded to adopt the report of the Committee on Resolutions —to table the resolution.

The motion was discussed by Messers Beal, Hostmann, Antonow, Diner. A motion finally resulted to table the report of the Committee on Legislation.—Carried.

S. L. Hilton moved that Resolution No. 3, relating to double-strength tincture of ginger be taken from the table and referred to a Committee of Three, the Committee to report within ten minutes. He explained that a report of the action taken might not be understood.

Discussion of method whereby the resolution could again be taken up at this session resulted in a motion to reconsider the vote and the action taken when the resolution was laid on the table.—Carried.

The Chair appointed Messrs. Hilton, Hunsberger and Meissner to serve on the Committee provided by Mr. Hilton's motion.

Election of officers of the House of Delegates for the ensuing year resulted in the election of W. Bruce Philip of San Francisco as Chairman; W. D. Jones of Jacksonville, Fla., as Vice-Chairman. After each nomination, the Secretary was instructed by vote to cast the ballot of the delegates for the nominee.

Messrs. Jelinek and Antonow spoke of the benefits that would result from the headquarters building, and the value of coöperative work for it.

Clyde L. Eddy spoke of the help given to children of German pharmacists, through the efforts of a Committee composed of members of several national pharmaceutical associations, who had charge of funds for the relief. Grateful expressions had come from the parents of the children.

Mr. Philip moved that the Resolutions Committee prepare a resolution of thanks for the Local Committee and all others who had contributed to the success of the meeting and for hospitalities extended.—Carried.

Messrs. C. H. Packard, Theodore J. Bradley, and Henry B. Smith and others discussed the advisability of selecting a meeting date later in the fall or winter and early in spring, instead of during the summer. It was voted to have the Chairman appoint a Committee of three to confer with the Council relative to a change of time of meeting. Chairman Walton stated he would leave the appointment to the incoming chairman.

The Special Committee for redrafting Resolution Three presented the following resolution for consideration:

"WHEREAS, it has come to the attention of the members of the American Pharmaceutical Association in convention assembled that large volumes of alcohol are being withdrawn by certain

permit holders for the purpose of manufacturing double strength tincture of ginger to apply for beverage and not medicinal purposes, and

"WHEREAS, the withdrawal is not in good faith and not in compliance with the Federal prohibition law, Section 9; therefore be it

"*Resolved*, that the American Pharmaceutical Association strongly urges the prohibition unit of the Internal Revenue Bureau of the Federal Government to give this matter its serious consideration with a view of checking the misuse by stopping over-production at the source."

A motion to adopt was made by the members of the Committee and seconded.

Lengthy discussion followed. The final result was a revised resolution as follows:

"WHEREAS, it has been asserted that certain large permit holders other than retail pharmacists are withdrawing alcohol for the manufacture of double strength tincture of ginger in quantities so excessive as to suggest its use for beverage purposes."

"THEREFORE BE IT RESOLVED, that the American Pharmaceutical Association urges the prohibition unit of the Internal Revenue Bureau to give this matter its attention, and if the facts asserted are found to exist that then such permit holders as are found to abuse their privileges be dealt with according to law."

The Committee accepted the substitute resolution.

Chairman Walton expressed his delight and pleasure at having received such kindly and cordial coöperation on the part of the delegates in conducting the business of the House. He then installed W. Bruce Philip as the Chairman of the House of Delegates for the ensuing year.

Chairman Philip thanked the members and asked for their support. He recalled that he was a member of the Committee to draft the first By-Laws of the House of Delegates and associated with him were Messrs John G. Godding and Clyde M. Snow. He expressed his appreciation of the manner in which Mr. Walton had conducted the proceedings of the House of Delegates.

The resolutions as previously presented and accepted by the Special Committee were read by Mr. Beal, and on motion of J. G. Beard, seconded by Ambrose Hunsberger and vote, adopted unanimously.

Ambrose Hunsberger said "for fear of losing the opportunity of conveying to our retiring Chairman the kindly feelings that this body of delegates has towards the wonderful manner in which he handled this meeting, I want to take advantage of this opportunity to ask for a rising vote of thanks. In Pennsylvania we all know Mr. Walton's capabilities, and some of you have come to learn his firmness, the firmness that he applies, however, in such a kindly fashion that he rather impresses us as being a parliamentary steam roller equipped with balloon tires and four wheel brakes. That is the way he is looked upon in Pennsylvania."

The rising vote of thanks was heartily given.

The report of the Committee on Resolutions as a whole, as amended, was adopted by unanimous vote.

James H. Beal said "I wish on behalf of the House of Delegates to move a sincere vote of thanks to the efforts of this Committee on Resolutions and especially to its very competent and faithful and efficient Chairman, Mr. Hostmann. He has given a great deal of thought and attention to the discharge of a very difficult and disagreeable duty; he has had to pass upon questions where there were so many things involved that he could not be certain as to what form of resolution would best meet the situation.—Variously seconded and carried by unanimous vote.

The final session of the House of Delegates was then adjourned.

SPURIOUS SALVARSAN AND NEO-SALVARSAN MAKE THEIR APPEARANCE IN THE UNITED STATES.

During the past several years reports emanating from Europe have shown that spurious salvarsan and neo-salvarsan have been met with in practically all of the European countries, but it has not been until comparatively recently that spurious samples of these products have appeared on the American market. Within the past year a sample of salvarsan and one of neo-salvarsan, examined at the Hygienic Laboratory of the United States Public Health Service, failed to give a test for arsenic. These products were put up in sealed ampules bearing forged labels of a well-known German manufacturer. It, therefore, behooves dealers in these products to make sure of the reliability of their source of supply.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON NATIONAL FORMULARY COMMITTEE.*

BY WILBUR L. SCOVILLE, CHAIRMAN.

The outstanding work of the American Pharmaceutical Association during this year is the campaign for raising the funds for our Headquarters Building. This campaign has been conducted by two of the members of the N. F. Committee, Messrs. Dunning and Newcomb, and most of the other members have been actively engaged in assisting them. This has necessarily detracted from the work of the National Formulary revision and we are therefore a little behind our schedule. Nevertheless, most of the subcommittees have completed their work, and a considerable portion of the new text has been edited.

The last period of revision is always the most difficult. The hardest problems come last. The real constructive work is mostly reported in this period. The decision is made on tried formulas for the new elixirs, tinctures, ointments and other preparations which have been added, all of which has required considerable experimental work. Corrected formulas are finally judged and decision is rendered upon matters which call for discrimination.

Among the more important questions which have been decided recently, are the following:

Elixir Changes: The strength of all of the bromide elixirs has been changed from 10 grains of the bromide per teaspoonful to 15 grains per teaspoonful. This change was made to correspond to the average dose of the bromides as given in the Pharmacopœia, *viz.:* 15 grains. Each dose of these elixirs will now contain one average dose, as stated in the Pharmacopœia.

The vehicle of these elixirs has been changed from aromatic elixir to aqueous elixir of glycyrrhiza. The latter, being almost non-alcoholic, will dissolve more of the bromides and is also a better flavor for these salts.

Elixir of Sodium Salicylate has also been changed in strength to contain the U. S. P. average dose of sodium salicylate per teaspoonful, being increased from 5 grains to 15 grains per drachm. The vehicle in this case is not changed.

Elixir of Terpin Hydrate is another instance of change in strength, being increased from 1 grain to 4 grains per teaspoonful. In this instance, it has been necessary to increase the alcoholic strength of this elixir from 40% to 80%, to hold the terpin hydrate in solution. This stronger elixir will be the basis for the Elixir Terpin Hydrate and Codeine, and Elixir of Terpin Hydrate with Diacetylmorphine.

These changes have been made after considerable discussion and in some instances, several close votes.

Dental Preparations: After considerable correspondence, the committee of the National Dental Association offered 37 formulas for dental preparations, for our consideration. These included several tooth powders, tooth pastes and a variety of preparations that are used in the treatment of diseased teeth, sore gums and in the preparation of the teeth or gums for filling, etc. These formulas were submitted to a number of dentists and dental teachers in various sections and their opinions asked regarding the usefulness of these formulas in the N. F. The committee was especially aided in this by Prof. E. F. Kelly of Baltimore, Prof. Julius A. Koch of Pittsburgh and Prof. Wm. B. Day, of Chicago. After consideration, ten of the formulas were admitted to the N. F. These include a Pulp Capping Varnish, Local Anesthetic Solution, Pyorrhœa Astringent, Refrigerant Counter-irritant, Dental Liniment, Antiseptic Solution, Toothache Remedy, Resin Solution, and a Toothpowder. These formulas will be included in the next N. F. and the remaining formulas have been turned over to the A. Ph. A. Formulary Committee.

The addition of these dental formulas is in the nature of an experiment. If they are to become useful items in the Formulary, it is likely to be due to some marked attention to them, and to the dentists, on the part of pharmacists. They are candidates for attention in N. F. propaganda, which may lead to a closer relation between dentists and pharmacists. The National Formulary now recognizes the American Veterinary Medical Association and the National Dental Association and more cordial relations are anticipated for the future.

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* Presented before Section on Practical Pharmacy and Dispensing, Buffalo meeting of American Pharmaceutical Association, 1924.

Standardization: More preparations are to be standardized in the next edition, and this requires that more assay processes shall be added. These are to conform to the methods of the U. S. P.

Fluidextracts of Aconite and of Digitalis, which have been dropped from the U. S. P. were added to the N. F. But it has since been considered unwise to establish biological assay methods in the N. F. or to recognize such potent preparations without standardizing them, so both have been dropped. The Pharmacopœia considers them unnecessary, the tinctures being generally used, and since they are not needed for any official preparations, it seems best to allow them to lapse.

Another revision may see biological assay methods introduced into the N. F. but the time does not seem ripe for it to assume the responsibilities of that work now.

Tables: Several tables are to be added. The U. S. P. table of Metric Equivalents does not meet well the needs of the pharmacists, and the N. F. will use the table of the U. S. P. VIII. This gives in concise form, the usual equivalents which the pharmacist uses, without any calculation, and it also includes the equivalents of apothecaries and avoirdupois weights.

A table of solubilities, to include the chemicals of both the U. S. P. and N. F., is to be compiled. This may prove to be a convenience to pharmacists by furnishing a ready reference to the solubilities of the substances which he handles.

A table which will show the various official preparations, into which each active medicinal agent enters, will be of service to physicians and may be helpful in propaganda work. This table will suggest the value of the N. F. formulas to the physicians especially.

A table showing the alcoholic strength of official menstrua and one of the alcoholic strength of the N. F. preparations, is being prepared.

Part III of the N. F. will therefore, more closely than heretofore, resemble Part II of the Pharmacopœia. But there will be no more duplication than will be necessary for the operations directed in Parts I and II of the N. F.

In all the work of revision, attention has been paid to criticisms and suggestions which have been offered. Some things have been reconsidered several times on account of such criticism. The committee has not only welcomed, but has sought suggestions, and has heeded them. If all have not been followed, it is because, in the judgment of the committee, they did not harmonize with the general purpose of the book, or were unwise for other reasons.

The work should go to the printer very soon but it will, probably, be at least a year before it can be issued. The proofreading requires care, and it takes time to go through the hands of all of the Committee.

Our aim has been to keep pace with the revision of the Pharmacopœia, and we still hope to accomplish it.

ABSTRACT OF DISCUSSION.

EDITOR'S NOTE.—The remarks of Chairman Scoville, in part, are included in the report and only repeated here as far as deemed necessary. Relative to the discussion on Wines, the readers are referred to Volume XI, JOURNAL A. PH. A., pp. 973, 1033 and 1037.

Chairman Scoville explained the situation, relative to elixirs, especially those containing bromides. The amount of active constituent has been increased by 50%, so as to have a U. S. P. dose in each teaspoonful—15 grains now, formerly 10 grains. This has necessitated a change in the solvent elixir, elixir glycyrrhiza replacing the aromatic elixir. The Committee is not thoroughly satisfied with the change. The solvent elixir gives the preparations a different taste and appearance.

W. H. Glover favored the larger dose, but not the change of vehicle, as it would require explanation to patrons who were accustomed to the elixirs of the present National Formulary.

Lyman F. Kebler insisted that there should be uniformity of dosage in preparations of the National Formulary and U. S. Pharmacopœia.

Irwin A. Becker said that if a weaker elixir was desired by the physician, dilution was an easy matter.

B. E. Höckert's experience indicated that a 10-grain preparation is satisfactory.

William Gray said, if the U. S. P. dose is to be represented in a teaspoonful, aromatic elixir would have to be replaced by another, more aqueous elixir.

Lewis C. Hopp contended that the present elixir was satisfactory, a larger dose would be objected to by the patient; two teaspoonfuls could be given, if a larger dose was necessary.

Ivor Griffith pointed out the impossibility of having a U. S. P. dose of all medicinals in a teaspoonful of the corresponding preparations. There would be complaint if a change was made in the elixirs under discussion, and, in his opinion, changes should only be made in case of necessity or more general demand than seemingly apparent for the elixirs under discussion.

Redmond Mayo and Henry B. Smith spoke along the same lines as the preceding speaker.

Chairman Scoville was pleased to hear the views of the members and then referred to the increased amount of terpin hydrate in the elixir of it, which necessitated an 80% alcoholic solvent.

The question was asked whether the elixir would not then be classed among the alcoholic beverages. To this the Chairman replied that he could not anticipate the rulings of the Department.

Among those participating in the discussion were Messrs. Redmond Mayo, Kebler, Glover, Krantz, Dunning, Höckert and others. No definite conclusions were arrived at.

Chairman Scoville spoke of the cöoperation of the National Dental and Veterinary Associations—see report. He referred to the difference of the two standards—the U. S. P. and N. F.—the latter must include preparations that are not restricted in their uses to medical practice. He also referred to the tables mentioned in the report and, particularly, to that which names the preparations into which active constituents enter, thereby the physician can select the preparation which best suits the case in question.

Theodore D. Wetterstroem brought up the deletion of wines to which reference is made in the Editor's note, at the beginning.

Chairman Scoville sympathized with the Ohio pharmacists; he explained that the National Formulary Committee gives consideration to the views of pharmacists throughout the country, as far as this is possible.

MICROMETHOD FOR DETERMINATION OF SPECIFIC GRAVITY, SURFACE TENSION AND VISCOSITY OF THE BLOOD.

Van Walsem adapts a capillary pipet and a disk with saw-tooth edge to a Pravaz syringe, the whole forming his "one hand precision aspirator," of which he gives an illustrated description. With this he determines the specific gravity of the blood by forcing a droplet into small flasks containing graduated concentrations of sodium chloride solution, the specific gravity of which is known. The flask in which the blood forced into the fluid neither rises nor sinks, tells the specific gravity of the blood. To determine the surface tension, with the same precision aspirator blood is forced out from the tip of the pipet until it forms a drop and falls. The height of the column of blood left in the pipet tells the amount of blood that was required to form the drop. It thus serves as a microstalagmometer, which, he says, renders all other complicated apparatus unnecessary. Given the specific gravity and the surface tension of the blood, it is easy to calculate the viscosity from the length of time it takes for the blood to form a drop and fall.—*Nederlandsch Tijdschrift v. Geneeskumde,* August 16, Amsterdam, through *Jour. A. M. A.*, October 4, 1924.

FRENCH MEDICINAL PLANT CONGRESS.

Among those who took part in the fourth Congress of the National Office of Medicinal Plants, held at Lyons during the last week of May, were Professor Perrot, director of the office; M. Fromont, president of the syndicate of the drug and herb trades; MM. de Poumeyrol, Poizat, Jourdan, Gignoux. The first day was devoted to a visit to the plantations in the vicinity of Lyons and the experimental station of Bron. At the dinner, in replying to the toast of the Office National, Professor Perrot stated that the creation of this organization, designed to promote the cultivation and collection of indigenous medicinal plants, was really originated in Lyons, and was due to the initiative of MM. de Poumeyrol, Prothiére and others. Already the importation of medicinal plants into France has decreased by 50 per cent., and the time was near when it would be possible to begin exporting medicinal plants, either in the form of crude drugs or as manufactured preparations.—Through *Chemist and Druggist.*

PHARMACEUTICAL FORMULAS

PROPOSED FOR "BOOK OF UNOFFICIAL FORMULAS, A. PH. A."

The formulas heretofore published will be found in Volume I, JOURNAL A. PH. A., pp. 169, 366, 505, 637, 760 and 1307; Volume V, pp. 309, 422, 529, 631, 748, 862, 991 (see also p. 1129), 1126, 1265 and 1397; Volume VI, pp. 79, 194, 298, 393, 486, 563, 643, 729 and 823. See also Volume X, pp. 292, 382, 468, 534, 628; Volume XI, pp. 551, 624; Volume XIII, pp. 357, 471, 562, 655, 739.

For list of committee members and committees see April issue, 1921, p. 292; also refer to Roster on p. X of this issue. Suggestions for formulas, and comments on those published, are invited. They may be sent to a member of the Committee or to Chairman J. Leon Lascoff, 1223 Lexington Ave., New York, N. Y.

DENTAL FORMULAS PROPOSED BY THE NATIONAL DENTAL ASSOCIATION.

No. 893.

EUCA-PERCHA COMPOUND, BUCKLEY.

Gutta-percha base plate	480 Gm.
Menthol	16 Gm.
Thymol	24 Gm.
Eucalyptol	480 Gm.

Heat the gutta-percha and eucalyptol on a water-bath stirring occasionally until of uniform consistency, then add the menthol and thymol. Used for filling of root canals.

No. 894.

TEMPORARY STOPPING.

White Beeswax	1 Gm.
Gutta-percha base plate	4 Gm.
Prepared Chalk	4 Gm.

Melt the wax on a water-bath, and the gutta-percha, stir until liquefied, and incorporate the chalk. Knead until thoroughly mixed and pass through a dental rolling mill, having grooved rolls.

No. 895.

STICKY WAX.

Rosin	16 Gm.
Yellow Beeswax	8 Gm.
Vermillion	1 Gm.

Melt on a water-bath and stir, pour on a glass slab and roll with wet fingers into pencils or pour into moulds.

No. 896.

DEVITALIZING PASTE.

Arsenic Trioxide	90 Gm.
Procaine, U. S. P.	50 Gm.
Phenol crystals	10 Gm.
Lanolin, to make paste	

Used for the purpose of devitalizing of dental pulps when hermetically sealed in the cavity of a tooth.

No. 897.

SKINNER'S DISCLOSING SOLUTION.

Iodine, crystals	5.0 Gm.
Potassium Iodide	1.5 Gm.
Zinc Iodide	1.5 Gm.
Distilled Water	35.0 cc.
Glycerine	35.0 cc.

To be applied to teeth before cleaning with brush and pumice.

No. 898.

PHENOL COMPOUND, BUCKLEY.

Menthol	10 Gm.
Thymol	20 Gm.
Phenol, liquid	90 cc.

No. 899.

EUCALYPTOL COMPOUND.

Menthol	32 Gm.
Thymol	48 Gm.
Eucalyptol, enough to make	1000 cc.

No. 900.

THYMOLIZED CALCIUM PHOSPHATE, BUCKLEY.

Thymol	10 Gm.
Calcium Phosphate, precipitated	438 Gm.

To be made into a paste by adding oil of clove at the time it is to be used, as a capping for vital pulps.

No. 901.

GLYCEROL OF ZINC IODIDE.

Zinc Ioxide	15 Gm.
Iodine	25 Gm.
Glycerin	40 cc.
Distilled Water	10 cc.

Triturate the zinc iodide and iodine together in a glass mortar; add the water and finally the glycerin. Keep it in glass-stoppered bottles.

No. 902.

SILVER NITRATE SOLUTION.

Solution "A."

Silver Nitrate	3 Gm.
Distilled Water	1 cc.
Ammonia Water, 28%	2.5 cc.

Solution "B."

Solution of Formaldehyde 10%. Cavity or root canal is first flooded with Solution "A." then Solution "B" is added for the purpose of depositing metallic silver previous to filling the cavity or for filling of root canals.

No. 903.

LOCKE'S SOLUTION.

Sodium Chloride	9 Gm.
Calcium Chloride	2.4 Gm.
Potassium Chloride	4.2 Gm.
Sodium Bicarbonate	0.2 Gm.
Dextrose	1.0 Gm.
Distilled Water to make	1000.0 cc.

Make a solution; filter.

No. 904.

TOOTH POWDER NO. 1.

Astringent, abrasive, detergent. Oral astringent, sanitary cleanser, tooth polisher.

Castile Soap, in a very fine powder	33 Gm.
Zinc Phenolsulphonate, in a very fine powder	44 Gm.
Pumice, in a very fine powder	263 Gm.
Stannic Oxide, very fine powder	132 Gm.
Precip. Calcium Carbonate, very fine powder	528 Gm.

Flavoring, a sufficient quantity.

No. 905.

TOOTH POWDER NO. 2.

Astringent, detergent. An astringent germicide; indicated in pyorrhea and receding gums.

Castile Soap, in a very fine powder	40 Gm.
Sugar, in a very fine powder	54 Gm.
Stannic Oxide, in a very fine powder	213 Gm.
Zinc Phenolsulphonate, in a very fine powder	53 Gm.
Precip. Calcium Carbonate, in a very fine powder	640 Gm.

Flavoring, a sufficient quantity.

No. 906.

TOOTH POWDER NO. 3.

A detergent powder for general use. A hygienic cleanser and prophylactic.

Castile Soap, in a very fine powder.	44 Gm.
Sugar, in a very fine powder	60 Gm.
Stannic Oxide	179 Gm.
Precip. Calcium Carbonate, very fine powder	717 Gm.

Flavoring, a sufficient quantity.

No. 907.

TOOTH POWDER NO. 4.

Antiacid; tends to prevent and remove sores and tartar.

Castile Soap, in a very fine powder.	40 Gm.
Sugar, in a very fine powder	54 Gm.
Stannic Oxide, in a very fine powder	162 Gm.
Sodium Borate, in a very fine powder	108 Gm.
Precip. Calcium Carbonate, very fine powder	636 Gm.

Flavoring, a sufficient quantity.

No. 908.

TOOTH POWDER NO. 6.

Benzosulphinide	0.25 Gm.
Solution of Carmine, N. F.	2.00 cc.
Oil of Cassia	0.50 cc.
Oil of Peppermint	0.50 cc.
Oil of Clove	1.00 cc.
Soap, dried and granulated	10.00 Gm.
Prepared Chalk	90.00 Gm.

Reduce the soap and the chalk to a fine powder, mix them thoroughly with each other and with the other ingredients. Finally pass the powder through a No. 60 sieve.

No. 909.

HARLAN'S TOOTH POWDER.

Calcium Carbonate, precipitated	100 Gm.
Orris Root	100 Gm.
Castile Soap	25 Gm.
Sodium Bicarbonate	25 Gm.
Myrrh	100 Gm.
Oil of Wintergreen	10 cc.

No. 910.

RHEIN'S TOOTH POWDER.

Calcium Carbonate	328.00 Gm.
Oil of Peppermint	4.10 cc.
Oil of Gaultheria	8.20 cc.
Sodium Bicarbonate	28.00 Gm.
Sodium Oleate	28.00 Gm.
Potassium Bitartrate	56.00 Gm.
Saccharin	.01 Gm.

No. 911.

MILLER'S TOOTH PASTE.

Calcium Carbonate, precipitated	100.00 Gm.
Magnesium Carbonate	5.00 Gm.
Cuttlefish Bone	4.00 Gm.
Sugar	2.00 Gm.
Myrrh	2.00 Gm.

Massing fluid, to make a paste.

No. 912.

RINGER'S SOLUTION.

Sodium Chloride	7.00 Gm.
Calcium Chloride	0.25 Gm.
Potassium Chloride	0.30 Gm.
Distilled Water	1000.00 cc.

Employed as a vehicle for local anesthetic solutions.

No. 913.

ANTISEPTIC MOUTH WASH.

Boric Acid	35.00 Gm.
Benzoic Acid	1.00 Gm.
Thymol	3.00 Gm.
Eucalyptol	5.00 cc.
Oil of Wintergreen	5.00 cc.
Menthol	6.00 Gm.
Glycerin	100.00 cc.
Alcohol	250.00 cc.
Water, to make	1000.00 cc.

No. 914.

TOOTH WASH-DENTIFRICE (Hynson, Westcott, Dunning).

Benzoic Acid	4.00 Gm.
Sodium Borate	4.00 Gm.
Boric Acid	8.00 Gm.
Eucalyptol	1.50 cc.
Oil of Spearmint	0.50 cc.
Menthol	0.60 Gm.
Methyl Salicylate	7.50 cc.
Alcohol	420.00 cc.
Cudbear	3.00 Gm.
Syrup	90.00 cc.
Tincture of Quillaja	150.00 cc.
Glycerin	30.00 cc.
Fluidextract Baptisia	7.50 cc.
Distilled Water, to make	1000.00 cc.
Purified Talc	15.00 Gm.

Mix the glycerin with the 340 cc. of distilled water; in this dissolve the boric acid and sodium borate, then add the syrup and tincture of quillaja. In the alcohol dissolve the benzoic acid and menthol, then add the eucalyptol, the oils and the fluidextract. Now mix the two solutions with constant stirring, and add sufficient water to make 1000.00 cc. Finally add the powdered cudbear and purified talc. Let the mixture stand for three days with occasional agitation; then filter, returning the filtrate until clear.

No. 915.

TOOTH PASTE (Slightly acid reaction).

Calcium Phosphate, precipitated	600.0 Gm.
Saccharin	0.3 Gm.
Flavor, *q. s.*	
Glycerite of Tragacanth, *q. s.*, to make	1000.0 Gm.

No. 916.

TOOTH PASTE (Alkaline and Saponaceous).

Prepared Chalk	500.0 Gm.
Powdered Soap	50.0 Gm.
Saccharin	0.3 Gm.
Glycerite of Tragacanth, *q. s.*, to make	1000.0 Gm.

PHARMACY INSPECTORS AS GOVERNMENT OFFICIALS.

Not only in the United States but elsewhere it is contended that pharmacists are best qualified to serve in positions that affect pharmacy. The following is from the *Chemist and Druggist* of May 17, from the Paris correspondent:

"M. Edmond Revel (a qualified pharmacist) recently graduated as doctor of law with a thesis on 'The Repression of Fraud and Adulteration in Pharmacy.' He cites that the Adulteration Act of 1905 punishes adulteration independently of the question of the illegal exercise of pharmacy. He expresses the opinion that it would be preferable if pharmacy inspectors were government officials, *i. e.*, civil servants who have qualified as pharmacists. Such a system was proposed by M. Crinon many years ago, but was unfavorably received. M. Revel also suggests that French inspectors should be relieved of purely 'police' duty, such as the seizing of samples, and that their activities should be confined to the general supervision of pharmacies."

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.

Members of the Council, A. PH. A.: JAMES H. BEAL, *Chairman;* S. L. HILTON, *Vice-Chairman;* ROBERT P. FISCHELIS, *Secretary;* CHARLES H. LAWALL, HENRY M. WHELPLEY, H. V. ARNY, A. G. DUMEZ, CHARLES E. CASPARI, W. L. SCOVILLE. *Ex-Officio:* CHARLES W. HOLTON, President; Vice-Presidents, PAUL S. PITTENGER AND WILLIAM MANSFIELD; WILLIAM B. DAY, Secretary; E. F. KELLY, Treasurer; W. BRUCE PHILIP, Chairman of the House of Delegates; Editors of the JOURNAL and YEAR BOOK. Committee on Publications: R. P. FISCHELIS, *Chairman;* H. V. Arny; PAUL S. PITTENGER; E. F. KELLY; WM. B. DAY; A. G. DUMEZ; E. G. EBERLE.

Collaborators: The members of the Council; the Editor of the YEAR BOOK, A. G. DUMEZ; E. FULLERTON COOK, Chairman, U. S. P. Revision Committee; W. L. SCOVILLE, Chairman, N. F. Revision Committee; the Chairmen of the Sections, A. Ph. A.: PAUL S. PITTENGER, WILLIAM MANSFIELD, JOHN C. KRANTZ, JR., R. S. LEHMAN; W. BRUCE PHILIP, Chairman of the House of Delegates, A. Ph. A.; W. H. Zeigler, President A. C. P. F.; CHARLES B. JORDAN, Chairman Executive Committee, A. C. P. F.; H. LIONEL MEREDITH, President, N. A. B. P.; HENRY C. CHRISTENSEN, Secretary, N. A. B. P.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS URGES ITS MEMBERS TO GIVE A. PH. A. HEADQUARTERS ACTIVE SUPPORT.

The National Association of Retail Druggists held one of the most successful meetings in its history at Washington. The attendance was good and much important business was transacted. A resolution adopted by the convention gives indorsement to the project of the American Pharmaceutical Association to secure a suitable headquarters; the resolution follows:

"WHEREAS, our sister organization, the American Pharmaceutical Association, is conducting a campaign for the collection of a fund to be used for the erection and equipment of a suitable headquarters building to house the numerous activities of that worthy association and

WHEREAS, we recognize the many valuable services of the American Pharmaceutical Association in the cultivation of scientific and professional pharmacy; therefore be it

Resolved: That we cordially indorse the project of the American Pharmaceutical Association to secure a suitable headquarters building and urge upon the members of the N. A. R. D. that they give the project their active support."

CODE OF ETHICS OF ASSOCIATED ADVERTISING CLUBS OF THE WORLD.

The following code of ethics has been published for all engaged in advertising, by the Associated Advertising Clubs of the World—

We pledge ourselves:

"1. To dedicate our efforts to the cause of better business and social service.

"2. To seek the truth and live it.

"3. To tell the advertising story simply and without exaggeration, and to avoid even a tendency to mislead.

"4. To refrain from unfair competitive criticism.

"5. To promote a better international understanding based upon a recognition of our mutual responsibilities and our interdependence.

"6. To conserve for ourselves and for posterity ideals of conduct and standards of advertising practice born of the belief that truthful advertising builds both character and business.

"It pays to advertise truthfully, giving returns to all concerned and thereby establishing that confidence which enhances business, strengthens individuals and gives to all a real demonstration of Christian principles in service."

BULLETINS OF DRUG TRADE BUREAU OF PUBLIC INFORMATION.

Bulletins B-32-34 of the Drug Trade Bureau of Public Information have been issued by Director Robert P. Fischelis. All of these have to do with the transactions of the "Golden Anniversary" meeting of the National Wholesale Druggists' Association. The first of these bulletins refers to the reports of various committees, and an open forum on legislation problems, led by W. L. Crounse, of Washington.

The next bulletin quotes at length from a comprehensive report by the Committee on Credits and Collections, of which Lee M. Hutchins, of Grand Rapids, Mich., is the Chairman. The report attributes many of the conditions that obtain to the war; included therein are increase in vice, selfishness and disregard for other people's rights. Business conditions are discussed at length and from every angle. The following statement occurs in the report: "Many of our members have indicated that their present condition as to terms and discounts can be largely attributed to the somewhat unexpected results from Uncle Sam's policy under the prohibition act or erecting fake competition to the legitimate wholesale druggists."

The point of contact of the several divisions of the drug trade is indicated by the following quotation: "We believe that the wholesale drug trade is strong enough to adopt uniform terms and discounts believing that the selling plan, which has been followed for so many years from the manufacturer to the jobber and the jobber to the retailer, especially in the drug business, is the most economical that can possibly be arranged."

Bulletin B-34 presents extracts from the Presidential Address of G. Barret Moxley. He forecasted a year of good business and then reviewed market and business conditions. Speaking of the coöperation of the divisions of the drug industry, he said in part:

"The old day when each branch of the trade regarded all of the other branches as natural enemies from whom advantage must be forced, or against whom some defense must be erected, is rapidly passing.

"Some business prophets predict tremendous changes in merchandising that will almost eliminate the independent retailer; but in my judgment the individual retailer is the backbone of the nation's commerce, and with our assistance, in the application of progressive methods, he will grow in usefulness to greater prestige and success."

In another part of his address President Moxley said—"Coöperation is not a one-sided proposition;" and, elsewhere, the following: "The united front with which the legitimate alcohol-using industries opposed the enforcement of this stipulation* augurs well for future unanimity of action when legitimate interests are menaced by illegal or unreasonable requirements."

* In a sense to police their customers—this stipulation has recently been withdrawn by the Department.

PUBLICATIONS OF THE DEPARTMENT OF COMMERCE.

Trade Information Bulletins Nos. 266 and 269, recently issued, have both interest and value for all retailers, for whose benefit they were prepared, with the aim of aiding them in overcoming some of their more difficult problems. The records of the morgue of business failures give "poor management" as the cause of a vast majority of commercial deaths. The latter bulletin relates to "Success in Retailing" and names proper site selection as one of the most vital problems of retailing. The bulletins may be obtained upon request to the Department of Commerce in Washington.

A report is soon to be issued by the National Industrial Conference Board, which analyzes the development of trade associations and the legal status and economic importance of their activities.

PERSONAL AND NEWS ITEMS.

Dr. George H. Simmons, for more than twenty-five years editor of the *Journal A. M. A.*, at the San Francisco session of the American Medical Association asked to be relieved of the responsibilities he has successfully borne. He was elected Editor and General Manager Emeritus. An editorial of the *Journal A. M. A.*, October 4, states—"*The Journal* and the extensive enterprises of the American Medical Association will always be a monument to the editorial and administrative genius of Dr. George H. Simmons." Dr. Simmons is on an extended trip to Europe and India.

W. F. Gidley, for a number of years professor at Purdue University, a past chairman and secretary of the Section on Education and Legislation, A. Ph. A., has been elected head of the Pharmacy Department of the University of Texas.

W. R. Neville, of Austin, is now associate professor of pharmacy at the University of Texas, of which institution he is an alumnus.

I. V. S. Stanislaus, professor of pharmacy and mathematics in the Brooklyn College of Pharmacy—formerly, of the Department of Pharmacy, University of Notre Dame, dean and professor at Medico-Chirurgical College, Philadelphia, etc.—is now pharmaceutical editor of the *Pharmaceutical Era.*

Past Chairman of the Section on Commercial Interests, A. Ph. A., **Henry B. Smith,** has been elected Chairman of the Board of Trustees of Brooklyn College of Pharmacy.

Gustave Bachman, professor of pharmacy in the University of Minnesota College of Pharmacy, is convalescing, following a major operation. He writes that he has resumed part of his duties.

"A Half Century of Research in Plant Chemistry—a chronological record of the scientific contributions of **Frederick Belding Power**"—makes up a 16-page reprint from the *American Journal of Pharmacy.* The titles, not including book reviews, sketches and addresses, number 127. Dr. Power was the recipient of the Ebert Prize on three occasions and ten or more prizes and medals are listed under awards.

Dr. Elwood Hendrick, internationally known through his articles on popular chemistry, has been selected to head the Chandler Chemical Museum by the trustees of Columbia University. His appointment as curator will take effect on October 1st.

The Chandler Museum has been built up over a period of more than fifty years by Prof. Charles F. Chandler, dean of American Chemists and for many years professor of chemistry in the New York College of Pharmacy. The Museum consists of the raw and finished products of manufacture of most of the important industries of this and other countries.—*Practical Druggist.*

Professor Chandler has been a member of the American Pharmaceutical Association since 1867; his senior in years of membership is Joseph L. Lemberger.

Hugo Kantrowitz, a past chairman of the Section on Historical Pharmacy, A. Ph. A., editor of the *Apotheker Zeitung,* recently received an honor of which he is justly proud. He was presented with an embossed diploma, which confirmed his appointment to honorary membership in the German Pharmaceutical Society in recognition of his services toward the advancement of German-American pharmaceutical literature.

Publicity Director, **E. L. Newcomb,** attended the annual meeting of the National Wholesale Druggists' Association and of the National Association of Retail Druggists. He addressed both bodies on the subject of A. Ph. A. Headquarters.

Edward Spease, dean of the School of Pharmacy, Western Reserve University, in an article, published in the *Pharmaceutical Era,* states that Chiropractic is a menace to druggists and that pharmacists should combat propaganda of the cult and thus, in his opinion, assist in protecting public health.

The Virginia Pharmacist, each month, publishes a list of Virginia subscriptions to the A. Ph. A. Headquarters—the last number adds more than $500 to that heretofore subscribed.

A number of states now have 100 per cent. record towns and cities in subscriptions to the A. Ph. A. Headquarters Fund—the full quota will be made up—the number of subscribers is quite as important as the total of money subscribed.

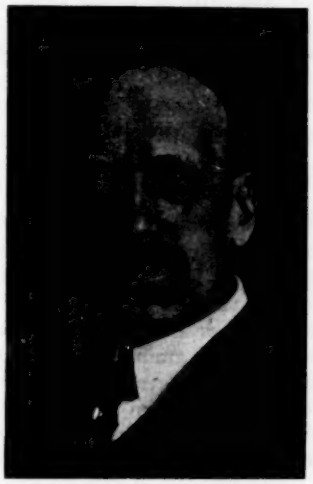
The Philadelphia Association of Retail Druggists' Building "is bought and paid for" was the proud announcement by this body at the Washington N. A. R. D. Convention. When the building was purchased, in 1923, there was a difference of opinion relative to the time when loans would be repaid to subscribers—the time stated ranged from "in about 2 years" to "never"—the answer by actual result—in 16 months. This is cited as an incentive to other organizations for expressing their faith by owning their own home.

OBITUARY.

DR. HENRY KRAEMER.

Dr. Henry Kraemer, member of the American Pharmaceutical Association since 1892, notice of whose death was made in the September JOUR. A. PH. A., died September 9, at the Harper Hospital, Detroit, Mich. Funeral services were held at his late residence at Mount Clemens, Mich. A sketch is printed in the July JOUR. A. PH. A., 1918. He was born in Philadelphia in 1868 and graduated from Girard College in 1883. He is an alumnus of the Philadelphia College of Pharmacy, Class of 1889; he won the John M. Maisch Microscope Prize and the Henry C. Lea Prize; thereafter he was assistant in General Chemistry to the late Prof. Samuel P. Sadtler, at the University of Pennsylvania. From 1890–1892, he was instructor in Pharmacognosy in New York College of Pharmacy. During his sojourn in New York he studied chemistry in

Columbia University, receiving his Bachelor's degree in 1895. He then accepted the chair of botany, pharmacognosy and materia medica in the School of Pharmacy of Northwestern University, with the privilege of spending a year abroad. This he did, and later graduated from the University of Marburg, receiving his Ph.D. from that institution. This was followed by twenty years' service on the faculty of the Philadelphia College of Pharmacy, a



DR. HENRY KRAEMER.

connection which he resigned in 1917 to take a professorship in the College of Pharmacy of the University of Michigan, finally becoming dean in 1919, a position he held for a short time.

In addition to his duties as a member of the faculty of the Philadelphia College of Pharmacy, he was editor of the *American Journal of Pharmacy* from 1898 to 1917, and had served as a member of the Revision Committee of the U. S. Pharmacopœia since 1900, being chairman of the sub-committee on botany and pharmacognosy.

He was a member of many pharmaceutical and other scientific societies and served as president of the American Conference of Pharmaceutical Faculties in 1917. Upon his retirement from the U. of M. faculty in 1920, he devoted himself to his scientific researches, which, however, were greatly interrupted by the outside demands for professional and legal work. This undermined his strength and it was too late to recuperate when he called in medical aid.

The honorary pallbearers were: Prof. E. Fullerton Cook, chairman of the U. S. Pharmacopœia Revision Committee; Dr. E. L. Newcomb, University of Minnesota; Ex-President, A. Ph. A., Julius A. Koch, University of Pittsburgh College of Pharmacy; Dr. Herbert W. Emerson of the Pasteur Institute, University of Michigan; Prof. Wilbur L. Scoville, Chairman National Formulary Committee; H. C. Christensen, Chicago, Secretary of the National Association of Boards of Pharmacy; J. H. Webster, President of the National Association of Retail Druggists; A. L. Buzzell, editor *Bulletin of Pharmacy;* Oscar Gorenflo, of the Michigan Board of Pharmacy; Dr. H. C. Hamilton, Parke, Davis and Company, Detroit, Michigan, and Ralph Johnson, of the Detroit Institute of Technology. Active pallbearers were graduates of the University of Michigan and the Philadelphia College of Pharmacy, including Paul Schanher, of Mount Clemens, Ray Spokes, F. F. Ingram, Frank Duvoisin, Frank Ebner and Walter Frank, of Detroit.

MEMORIAL SERVICES.

Memorial services were held at Philadelphia College of Pharmacy and Science, September 29. There were present representatives of Girard College and Temple University and various organizations. Among the speakers were Deans Charles H. LaWall and J. W. Sturmer, Dr. Joseph M. Jameson, of Girard College, Prof. E. Fullerton Cook, Otto Osterlund, Dr. John Minehart, of Temple University, J. W. England, Dr. Albert P. Brubaker, president of the American Philosophical Society; Dr. Cheesman A. Herrick, president of Girard College, and E. G. Eberle.

The deceased is survived by his widow and a daughter.

The remarks of **J. W. England** in paying tribute to the work of Dr. Henry Kraemer, as an author, educator, editor and research worker, follow:

IN MEMORIAM.

"It is somewhat difficult to evaluate the life of a man at the time of his passing. While it may be true, as Shakespeare says, that the good men do is oft interred with their bones, it is equally true that many of their good deeds live long after them.

"Henry Kraemer exerted, in his active, professional life of thirty-five years, a potent influence upon the growth and development of American pharmacognosy.

"He loved plants as a mother loves her child and no sacrifice was too great for him in his pursuit of botanical knowledge. Perhaps his most important work was that in structural botany, especially in relation to economic products and the cultivation of medicinal plants. He was one of the first botanists of the country to emphasize especially the fact that this department of botany had a point of view and a technique peculiarly its own, involving botanical problems of the highest commercial importance; and this led him to the preparation and publication of his masterly book on applied and economic botany.

"Equally important were his original investigations in systematic botany, especially in relation to the microscopic structure of starches and powdered drugs, which led him, later, to render such conspicuous service as the preparation of the text for the microscopic characteristics of powdered vegetable drugs of the U. S. Pharmacopœia, and to publish his valuable work on scientific and applied pharmacognosy, the leading textbook of its kind in this country.

"As a teacher at the College and other institutions for practically thirty years, he exerted a wide influence upon thousands of students, and as editor of the American Journal of Pharmacy for nearly a score of years, he worthily maintained the traditions of its founders. And as a member of the Committee of Revision of the U. S. Pharmacopœia for the past two decades he rendered conspicuously valuable service.

"Henry Kraemer was an original thinker and a voluminous contributor to scientific literature. He had rare power of observation and fine technical judgment, while his enthusiasm for and intense love of both pure and applied science, especially in his own field, resulted in the production of work of an unusually high scientific character, which will bear rich fruitage as the years go by and be a lasting memorial to him; he was one of the master research workers of American Pharmacy and has won for himself a place in its Hall of Fame."

EDWIN C. BENT.

Edwin C. Bent, member of the American Pharmaceutical Association; pioneer druggist of Dell Rapids, S. D.; representative business man and honored citizen of his State, died August 29, aged 72 years. He was for twenty-six years secretary of the South Dakota Pharmaceutical Association and for more than twenty years secretary of the Board of Pharmacy.

Mr. Bent entered the drug business at Deadwood, So. Dak., in 1877; in 1881, he moved to Dell Rapids. For a number of years he participated actively in the work of the National Association of Boards of Pharmacy. Last year, in token of esteem, the students of South Dakota School of Pharmacy presented him with a loving cup, and the presentation was enhanced by the presence of many State Association members. More recently, Prof. Anton Hogstad prepared a memorial booklet in which the character of the man and his service is placed on record.

GEORGE BALLARD TOPPING.

George B. Topping, proprietor of the pharmacy at 61 Parsons Ave., Columbus, Ohio, died suddenly in his store, September 15; he was stricken shortly after returning to his place of business from a walk downtown. Mr. Topping was a graduate of the University of Michigan, and, thereafter, employed in the laboratory of Orr, Brown & Price Co., wholesale druggists, of Columbus; after about eight years of service with the latter firm, he engaged in business on his own account; at this location he remained until his demise; Mrs. Topping survives her husband. The deceased affiliated with the American Pharmaceutical Association in 1913.

JOHN J. TOBIN.

John J. Tobin, for ten years president of the Boston Retail Druggists' Association and for five consecutive years treasurer of the Massachusetts Pharmaceutical Association, died at his home in Boston on August 29. Mr. Tobin was proprietor in the pharmacy at 243 Dorchester St., he was a member of the American Pharmaceutical Association, and had served as secretary and president of the Massachusetts Board of Registration in Pharmacy.

The deceased was a veteran of the Spanish-American war, serving as an orderly sergeant in the hospital corps. At the time of his death he was commodore of the South Boston Yacht Club, and a member of the Knights of Columbus; St. Augustine's Lyceum, South Boston Citizens' Association, and of the Boston Lodge of Elks. He is survived by his wife, four sons and two daughters.

DEATH OF MRS. CHARLES H. AVERY.

Members of the American Pharmaceutical Association sympathize with Charles H. Avery in his bereavement. Mrs. Avery had recently undergone a major operation in a hospital at Long Beach, Calif., the home of her daughter. The deceased was the first treasurer of the W. O. N. A. R. D., a charter member of the organization, and one of the first officers of Chicago chapter. Memorial services were held at the University Congregational church, Chicago.

SOCIETIES AND COLLEGES.

THE HEADQUARTERS CAMPAIGN.

Chairman H. A. B. Dunning, of the A. Ph. A. Headquarters Campaign Committee, speaking from the records of results in securing subscriptions, emphasizes the importance of intensive personal solicitation. The publicity given to the Headquarters has informed not only all pharmacists but lay members of the undertaking; this is re-inforced by personal visits to prospects, and every pharmacist should be a prospect.

Publicity Director Newcomb oulined the publicity work, at Buffalo, which had been carried on as a means of assisting the state chairmen and committeemen. He especially complimented the drug journals of the country for giving space, which, if it had been bought, would have meant a very large expense item. He pointed out that it was essential for state chairmen and committeemen to carry on their personal soliciting while the publicity material and articles in the journals were still fresh in the minds of all pharmacists.

The *News Letter* promoting the campaign is being sent to national and state pharmaceutical association officers, members of boards of pharmacy and advisory committeemen. Associate Publicity Director Falkenhainer has taken charge of this work.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

The twenty-sixth annual meeting of the National Association of Retail Druggists was a success from every viewpoint; the publicity given by the Washington press was good, the *Post* commenting editorially on the address of President J. H. Webster; the attendance was large, only exceeded by that of the Silver Anniversary meeting held in Boston last year. The address by James H. Beal on "Some First Principles and Some Common Delusions" met with general appreciation and wide publicity will be given by publication, by reprinting and distribution to national and state legislators.

President Coolidge received the members of the Association on Tuesday on the southeastern grounds of the White House, where he welcomed the visitors. "On the whole, business will meet less and less interference by the agencies of government just as it more nearly approximates to the ideal of usefulness to the community," the President said.

Another quotation from his address follows:

"I feel strongly that whenever such an organization as yours brings to Washington a great representative body of business men, it is bringing a section of the people that much closer to their government. It is affording the opportunity to familiarize themselves with the character, the extent and the infinite ramifications of a great political and also great business organization. It cannot but be a reminder of the intimate relationship which exists between the people and their government. It is not something afar off—but near and vital to their interests. I hope that your experiences will be a reminder also of the fact that the government is your government, that its agencies are set up to serve you."

A number of addresses concerned legislation, those of President Webster, Frank T. Stone, E. C. Brokmeyer, James H. Beal, and others. Mr. Brokmeyer insisted that much legislation was responsive to the indifference of the public; he referred to the Cramton Bill as a measure which would remove the right of the druggists to appeal to the Internal Revenue Commissioner from interference by the national prohibition forces. It was the opinion of several speakers that the latter measure would become law if the druggists did not contest strongly and bring the influence of constituents to bear on the Senators.

John W. Gamble, a banker of Omaha, said, in his address, that "the Congress does not represent the American people nor work for their welfare as a whole—it works under the bloc system representing the welfare of the group of people, business or otherwise, which sends them there." "The result is class legislation," he said, and urged, "it is time for

retail druggists to organize and get a bloc themselves."

TRADE CONDITIONS.

The comprehensive address of President Webster was favorably received both by members and the press. With reference to trade conditions he said in part:

"Generally speaking, trade conditions the past year have been of a slightly backward nature for the retail drug business, as has been the case in many other lines of trade. It is worthy of note that several chain drug-store organizations have been experiencing financial difficulties. This indicates to the independent druggist that this competition is not always successful. Our lesson to learn is that we should profit as much as we can from the experiences of the successful chains in following their business-like methods in many ways, such as accounting, advertising, window display and salesmanship. These features thoroughly systematized help towards business success and when coupled with the advantage of personal management should really give the capable independent druggist the advantage in winning patronage."

The report of the Executive Committee included a survey of conditions in the country and, more specifically, in the drug business; favorable expression was given for legislation fixing uniform prices—the report was made by Chairman Julius H. Riemenschneider: "Business conditions throughout the country have been far from satisfactory during the past year. Lack of employment in the larger cities and industrial centers and the low price of farm products in agricultural districts have all had a distinctly harmful effect upon business in general. It must also be admitted that the cut rate evil has not abated to any noticeable degree." The report of Secretary Samuel C. Henry showed a net gain of slightly more than 1,300 members; the treasurer's report receipts for the year of $172,560.98 and disbursements $164,666.21.

Relative to the N. A. R. D. Headquarters the Executive Committee reported progress and gave assurance that investigation will continue until a satisfactory location is secured.

The A. Ph. A. Headquarters received endorsement and the members of the N. A. R. D. were urged to give the project their active support.

A resolution was adopted condemning as "unfair" and "demoralizing" the practice of "a number of wholesalers" who "sell to the public at wholesale rates."

The Cramton bill was condemned and price maintenance legislation indorsed.

A resolution was adopted urging the education of the public, through drug stores, as to the lawful and necessary use of alcohol and narcotic drugs and the abuse of those products for illicit purposes.

OFFICERS.

The following officers were elected for the ensuing year: *President*, F. R. Peterson, of Oregon; *First Vice-President*, J. W. Cookson, of Kansas; *Second Vice-President*, D. S. Sanders of Tennessee; *Secretary*, Samuel C. Henry, of Illinois; *Treasurer*, Harry Guenther, of Ohio; and *Members of the Executive Committee*, Wm. A. Oren, of Indiana, and Samuel C. Davis, of Tennessee.

GOLDEN ANNIVERSARY MEETING OF THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

Reference has been made to the meeting of the National Wholesale Druggists' Association in the comments on the Bulletins of the Drug Trade Bureau of Public Information, on a preceding page of this issue of the JOURNAL. These references were chiefly from the carefully prepared and comprehensive address of President G. Barret Moxley and of Chairman Lee M. Hutchins.

The fact that this was the "Golden Anniversary" meeting influenced the attendance and also the place of meeting—more than 900 delegates were registered.

The program was enclosed in a golden cover and, in like manner but limp leather, an historical volume was prepared for the anniversary; the booklet has as frontispiece an engraving of James Richardson, first president of the Western Wholesale Drug Association, which, later, became the N. W. D. A. Between the Preface and the Title Page, is a page of quotations from the earlier presidents. Further reference to the book must be left to a later issue.

Many are the changes in the drug business since the organization was instituted and with these the Association has kept pace and aided largely in shaping the drug business in general. In his intermediate position, between manufacturer and retailer, the wholesaler has had a part in whatever affected the several branches of the drug trade and developed his service

accordingly. The *Oil, Paint and Drug Reporter* concludes an editorial as follows:

"The association has been a service organization in itself, assisting the wholesale drug trade through a multitude of perplexities, fighting the perennial attempts of busybodies to regulate the drug trade, pointing the way to a better realization of the controlling factors in business success, turning beyond its immediate division of the trade to help the retailer with his merchandising problems. In a hundred other ways, as current needs have demanded, the National Wholesale Druggists' Association has earned the right to look back with a satisfaction from the occasion of its golden jubilee. For as many reasons it may also look forward to years of ability to serve, to meet the new needs of further changing times. It is our wish that it may have the same measure as it has known—there could be no fuller attainment."

The Cramton Bill was opposed in every message that came before the convention—in the President's address, report of the Committee on Legislation, etc. Chairman Kline said "it (the Cramton bill) is actively opposed by practically every trade organization and scientific society in the country that is interested in the use of alcohol for industrial or scientific purposes, including the American Chemical Society, the Manufacturing Chemists' Association, the American Drug Manufacturers' Association, the Proprietary Association of America, the American Manufacturers of Toilet Articles, the National Wholesale Druggists' Association, the National Association of Retail Druggists, the National Flavoring Extract Manufacturers' Association, the National Paint, Oil and Varnish Association, and others."

Indorsement was given to the principle of price maintenance on trademarked articles. The association voted to continue its studies of operating expenses in connection with the Bureau of Business Research of Harvard University. A renewal of pledges will be made and sufficient funds raised to enable the members to aid in a more comprehensive study of operating expenses and problems than has yet been accomplished.

A tribute was paid to F. E. Holliday, who will shortly close twenty-five consecutive years of service with the association, and it was announced that as a token of appreciation Mr. Holliday will be given a leave of absence of sixty or ninety days, and a trip to Europe will be given to him and Mrs. Holliday.

OFFICERS.

President, Sewell D. Andrews of Minneapolis; *First Vice-President*, W. O. Kuebler, Newark; *Second Vice-President*, McKay Van Vleek, Memphis; *Third Vice-President*, W. F. Geary, Sacramento; *Fourth Vice-President*, George H. Huff, Columbus, Ohio; *Fifth Vice-President*, B. F. Page, Raleigh; *Secretary*, C. H. Waterbury, New York; *General Representative*, F. E. Holliday, New York; *Board of Control*, Roblin H. Davis, Denver, H. J. Bowerford, Fort Wayne, Ind., C. W. Whittleway, New Haven, and J. G. Smith, Savannah.

CENTENARY OF THE FRANKLIN INSTITUTE.

The Franklin Institute, which celebrated its centennial last month, may be said to owe its existence to the turning down of an application for membership of Samuel V. Merrick by an association of mechanics.

The apothecary who discharged Humphrey Davy is no longer known. Samuel V. Merrick conferred with Prof. William H. Keating, of the University of Pennsylvania, and on February 5, 1924, an organization was formed and the Institute, which has been successfully carried on by the organization, named the Franklin Institute. The outline of its work, more or less closely followed, was then stated as follows: "Delivery of lectures on the arts and the application of science to them; formation of a library of books relating to science and the useful arts; opening of a reading room; examination of all new inventions and discoveries by a committee of learned and honorable men; publication of a journal to contain essays on science and art, specifications of English and American patents, etc.; holding exhibitions of American manufacturers and awarding medals to worthy workmen; building a hall for the meetings of the institute and the use of the members; collecting machines, minerals, materials, etc., used in the mechanical arts; establishment of schools in which should be taught architecture and mechanical drawing, chemistry applied to the arts, mechanics; and, if possible, of a high school for giving young men a liberal and practical course of education."

During most, if not all, of its existence, pharmacists have been members and a number are on the list of membership to-day. Works and products of pharmacists have been given recognition, though in comparison with other departments of science and manufacture the former are relatively very few in number.

This is not the purpose of the comment, except in so far as giving a reason for its inclusion in these pages is concerned. The Institute has served as a "veritable world-inspiration," and its medals and certificates are highly valued in every land and have been treasured by some of the most eminent scientists of modern times. Even a mention of the names of leading scientists who attended the celebration during the week of September 19 would require considerable space. A bequest of $1,208,468 from the late Henry W. Bartol was made for research and a tablet in his memory unveiled. Among the scientists who delivered addresses the following only are named—many more were in attendance: Sir Ernest Rutherford, Trinity College, Cambridge; Major General Mason M. Patrick, chief of the Army Air Service; Dr. W. Lash Miller, University of Toronto; Prof. E. G. Coker, University College, London; Prof. F. Haber, Berlin; Prof. Charles Fabry, University of Paris; Sir Charles Algernon Parsons, Newcastle-on-Tyne, England; Dr. Pieter Zeeman, University of Amsterdam; Sir William Henry Bragg, Quain professor of physics in the University of London, director of the Davy-Faraday Research Laboratory.

MEDICAL CENTER PLANS SHOULD INCLUDE PHARMACY.

Pharmacy should be included in the great New York medical center plans; it is stated that around the nucleus—for which, it seems from the press, financial provisions have been made—such institutions as a dental school, various hospitals, etc., will be drawn. The costs for this medical center will foot up 20 millions or more. According to the *New York Times* of October 5, this will be the first complete adaptation of the medical center idea to the needs of New York City. It is planned to include, in a well coördinated form, every type of special hospital and institution necessary for the treatment of any patient and the training of any specialist who has to do with the protection and promotion of health.

THE INTERNATIONAL PHARMACEUTICAL CONGRESS OF FIFTY YEARS AGO.

The following interesting item is quoted from the *Chemist and Druggist* of September 15, 1874: "The International Pharmaceutical Congress at St. Petersburg met for the first *séance* on Friday morning, August 14, and finished work on the following Tuesday. Several scientific communications were read, and discussions ensued. The most interesting, though not quite pharmaceutical, was on the application of spectrum analysis to cremation, by M. Poehl, of St. Petersburg. The destruction of all proof of foul play by the system of burning the dead has been one of the most serious objections raised against cremation. M. Poehl ingeniously suggests the application of the spectrum. It will be a bold thing, however, to hang a man on the strength of such delicate evidence as that. With regard to the pharmaceutico-political subjects which were expressly submitted to this Congress, the following results were arrived at. It was agreed that the principal of a pharmacy ought to be responsible for the infringement of medical laws, or for errors or frauds in his establishment, only so far as those were made with his knowledge. Outside of that, assistants ought to be personally responsible. It was decided that the government inspection of pharmacies ought to be entrusted to two officers, one of whom would be a pharmacien actually engaged in practice, and further that he should be elected by the general body. With regard to an International Pharmacopœia, a resolution was passed that the time for such a work had arrived. The Congress generously assures us that an International Pharmacopœia is not intended to replace local pharmacopœias, but that it is desirable that when the latter are prepared their authors should accept and observe the general principles of the International Pharmacopœia. A committee was then appointed to take the subject into consideration."

FIRST PAN-AMERICAN STANDARDIZATION CONFERENCE.

The great Pan-American Financial Conference, held in Washington, D. C., 1920, passed this significant resolution: "*Resolved*, That the Conference recommends that the Metric System of weights and measures be universally employed, and that pending the attainment of that end, articles weighed and marked, and shipping documents prepared according to the system of weights and measures now prevailing in the United States, should be accompanied with statements giving the equivalents under the Metric System."

The All-America Standard comments: "The First Pan-American Standardization Conference (to be held in Lima, Peru, next December), as it deals especially with this field of enterprise, is expected to enact an even stronger metric program, and provide means to carry this program through to success."

THE PHARMACIST AND THE LAW.

PRICE MAINTENANCE BILLS IN CONGRESS.

A recent communication of the American Fair Trade League emphasizes the importance of pointing out to Congressmen and candidates for Congress that the pending measures are based upon principles immensely beneficial to the country at large. Edmond A. Whittier summarizes them in the statement that they will enable the manufacturer of a trade-marked or branded article to protect the consumer against misleading "bargain bait" advertising. He declares that a "triangle of support" is needed to turn these bills into law; that they are quite as important to wholesalers and to retailers as they are to producers.

"Those who understand the situation know that the great preponderance of sentiment is against unfair price cutting. It is up to the merchants of the country, however, to make this fact so startlingly evident that Senators and Representatives cannot ignore it. Moreover, the consumer's interest should be emphasized, since, in the last analysis, it is the consumer who makes the strongest appeal to Washington. Next to the consumer, in this respect, comes the small, independent merchant, whose number is millions and who is becoming more and more alive to the fact that price cutting on standard goods is making it increasingly hard for him to make a living profit."

To these merchants the Fair Trade League has suggested the slogan—A SQUARE DEAL FOR SQUARE DEALERS.

PER CAPITA MEDICINAL REQUIREMENTS OF NARCOTICS.

In "Public Health Reports" volume 39, No. 37, September 12, 1924, data secured in a narcotic survey of Allegany County, Md., are reported by A. G. DuMez, pharmacologist of the Division of Pharmacology, Hygienic Laboratory, U. S. Public Health Service. The survey was made in connection with drug addiction studies. Reasons are given for selecting this county for the purpose indicated; among them remoteness from coast, contains no large cities, occupations are diversified—the points bearing on the securing of a unit, which could be taken for an estimate of the country as a whole.

The actual work of the survey consisted in visiting all of the narcotic registrants in the county and compiling from their records the amounts of narcotics dispensed or used during the period of one year. In all there were visited 69 physicians, 12 dentists, 20 retailers (pharmacists), 3 wholesalers (pharmacists), 1 veterinarian, and 5 hospitals and sanitoria. The records of each were examined in detail. These records showed that for the period July 1, 1922, to June 30, 1923, the following quantities of narcotics were dispensed or used:

TABLE 1.—*Total quantities of opiates dispensed or used.*

	Grains.
Opium	38,937
Codeine sulphate and phosphate	29,410
Morphine sulphate and hydrochloride	22,284
Ethylmorphine hydrochloride(dionin)	4,724
Diacetylmorphine hydrochloride (heroin)	1,940
Cotarnine hydrochloride(stypticin)	788
Apomorphine hydrochloride	93
	Fl. oz.
Exempt preparations (paregoric, Bateman's drops, Godfrey's cordial, etc.)	10,366

Total cocaine dispensed or used.

	Grains.
Cocaine hydrochloride	11,485

Manner of computing equivalents is given in the report—these are given in Table 2.

TABLE 2.—*Opium equivalents of opiates.*

	Grains of opium.
38,937 grains of opium	= 38,937
28,555 grains (29,410—855) codeine sulphate	= 213,219
22,284 grains morphine sulphate	= 167,130
4,724 grains ethylmorphine hydrochloride	= 36,560
1,940 grains diacetylmorphine hydrochloride	= 13,060
93 grains apomorphine hydrochloride	= 850
10,366 fluid ounces exempt preparations	= 18,906
Total	488,662
	= 69.81 pounds

Coca leaf equivalent of cocaine.

	Grains of coca leaves.
11,485 grains of cocaine hydrochloride	= 2,051,220
	= 293.03 pounds

The per capita consumption of opium for Allegany County on the basis of a population of 69,938 as found for 1920 by the Bureau of the Census, United States Department of Commerce, would therefore be 6.98 grains. In the case of coca leaves, it would be 29.32 grains; to supply the entire United States on the basis, taking the population to be 106,000,000, would require the annual importation of approximately 105,697 pounds of opium and 443,988 pounds of coca leaves."

THE FONT OF LIBERTY.

The leading article in *The Atlantic Monthly* for October will be read with interest by pharmacists and others who realize that there seems no end to the making of laws and regulations. The article is by William P. Gest, of the Fidelity Trust Company of Philadelphia.

The writer refers to the first General Assembly ever held in Pennsylvania, which required that "the laws of this province, from time to time, shall be published and printed, that every person may have a knowledge thereof, etc." "Ignorance of the law excuses no one." Quoting the author:

"Moreover, the whole body of our Pennsylvania legislation probably does not exceed 41,736 statutes. The last Legislature passed only 451 new acts. So that our children by reading, say, an act a day (omitting Saturdays and Sundays and a moderate vacation) can keep abreast with current legislation, and, by reading four additional, or a total of only five a day, can readily catch up with the past Statutory Law of Province and State in about forty-two years, when they will be properly prepared for a review of Federal legislation. I do not guarantee this estimate, but anyone contemplating this course may count the laws for himself. He will find that (perhaps judiciously) I have omitted joint and concurrent resolutions, in which our children would be equally interested."

THAT REMINDS US.

The *Union* of January 2, 1823 says: "We learn by private advices from Harrisburg that, though some members of the present legislature of Pennsylvania are notorious demagogues, equally destitute of both talent and principles and though they are by no means free from party prejudices, sectional views, etc., and a factious hostility to the executive, yet there is good sense and integrity enough in the remainder, judging from such opportunities as have already been afforded for ascertaining their character, to give the assembly just claims to a reputation for respectability. From the same source, however, we learn that few measures of a general nature can be expected to be acted upon during the present session. The majority of the assembly do not want the disposition to promote the public good, but they are obliged to hesitate when any law of a general nature is proposed, because they cannot tell what its effect will be on the whole body of the laws. They cannot easily discover how they are to remedy defects in a system for they cannot find that any system exists. Thus it appears that our legislators, after puzzling lawyers, perplexing judges and confounding the people by the multitude and intricacy of their enactments, have at length made the law such a labyrinth that a clew cannot be found to guide even themselves through its multifarious windings and turnings.

ASSOCIATED ADVERTISING CLUBS OF THE WORLD.

The following excerpt is taken from a comment in the *Chemist and Druggist*, re the last annual meeting of the Associated Advertising Clubs of the World:

"It is possible that British advertising men and British manufacturers may catch an ethereal bubble of value from the flood of discussion, but it is well to remember that conditions in this country and in the United States are totally different. The psychology of the two peoples is not the same, and no advertising—particularly of chemist-handled products—is likely to succeed in this country or in the British Colonies unless the coöperation and goodwill of the chemist is ensured. The game of Forcing the Retailer to stock by creating a demand through the general public—originally a Trans-Atlantic idea—has failed so lamentably and so often that few try it on nowadays. The American advertising man cannot teach the British advertiser anything as regards the method of approach or the way to distribute. The British advertiser knows his public, but he has something to learn in technique and method of presentation."

"Respect is not a voluntary thing to be had by merely willing it; laws to be respected must be respectable. That the law was to be merely the declared will of the legislature was the last thing intended in our theory of government. This was the theory which the Thirteen Colonies rebelled against."—James H. Beal.

BOOK NOTICES AND REVIEWS.

Toxicology, or the Effects of Poisons. By Frank P. Underhill, Ph.D. P. Blakiston's Son & Co., Philadelphia, vii plus 292, 1924.

"This volume has been compiled with the object of presenting a short, concise description of the effects of poisons upon the organism. No attempt has been made to enter into the details of the chemical reactions involved in the isolation and identification of poisons." As the author points out, several recent publications have discussed the chemical aspect of toxicology, but the physiological aspect has not been presented. As a whole, this text covers the physiological aspect very well as a medical school text. More attention has been given to some products than might seem warranted by their importance or frequency of occurrence. Nothing is said in the Introduction about the excretion of poisons into the stomach; gastric lavage may be employed several hours after poisoning by morphine, *e. g.*, because of this mode of elimination. The effect of cumulation upon drug action is probably discussed at greater length in the lecture than in the text. The use of lead chromate in foods is specifically prohibited by the Federal and by many state food and drug laws, so the chance of lead poisoning by it (page 75) should be rather slight. There is an excellent discussion of the mode of action of the "war gases." Oddly, nothing is said about the separation of alkaloids by shaking out in immiscible solvents, although the alkaloidal precipitants are given. Pertinent recent references are usually given for each poison, but under Digitalis one finds only a reference to work done in 1912; some mention of the more recent monographs, such as that by Robinson, would seem helpful. It is rather surprising to find the recommendation (page 233) that castor oil be given as a purgative following oil of chenopodium.

The subdivision of each discussion into the general headings: Symptoms, Poisonous Action, Fatal Dose, Fatal Period, Post Mortem Appearances, and Treatment, appears valuable in aiding the memory of readers. It would seem that a table might be included, perhaps as an appendix, summing up this information for all the drugs presented, to serve as a ready reference.

A few misprints were noted, which may be readily corrected in the next edition. This publication covers a field which has not been discussed by recent writers, and the information is presented in a concise but interesting form. As a guide to the physiological effects of poisons, it should prove of much assistance to medical students and other interested persons.

J. C. MUNCH.

Quantitative Chemical Analysis. By Frank Clowes, D.Sc. and J. B. Coleman. A.R.C.S. Twelfth Edition. 576 pp. Blakiston's Son and Co., Philadelphia.

This being the twelfth edition, speaks for a well-deserved popularity. Originally written for the use of Senior students but later broadened so as to appeal to the practical chemist. The subject matter with its subdivisions has been handled in an original manner. The general divisions are:

PART I—GENERAL PROCESSES.
PART II—SIMPLE GRAVIMETRIC ESTIMATIONS.
PART III—VOLUMETRIC ANALYSIS.
PART IV—GENERAL QUANTITATIVE ANALYSIS.
PART V—ORGANIC ANALYSIS AND MOLECULAR WTS.
PART VI—VOLUMETRIC ESTIMATION OF GASES.
PART VII—REFERENCE TABLES.
PART VIII—PREPARATION OF GASES, USE OF COMPRESSED GASES. BOOKS OF REFERENCE.

Section I.—The Chemical Balance and Weighing.

This section deals with the adjustment and testing of the balance, testing of weights, weighing (direct and substitution), and the general handling of balances.

We do not fancy the author's method of weighing in which all the weights are removed from the box, placed on numbered squares and reading from the uncovered spaces. The present system of arrangement of weights in the analytic weighing-box, suffices for this method of checking.

Section II.—Determination of Relative Density. M. p. and B. p.

It seems unfortunate that the authors still adhere to the old standard of 15.5° C. only. Since this work is to be used in our country, it should have referred to our standards of 20° C. (Bureau of Standards) and 25° C. (the U. S. P.) which were adopted for well-known reasons. Further, methods for calculating gravities from one standard to another are missing—very necessary, since our gravity tables are usually expressed in either of the latter standards.

Practical examples as an aid to beginners in calculating results, form an admirable feature of this work.

The sections devoted to melting and boiling points are fine.

Section III.—Desiccation, Solution, Evaporation, Precipitation, Treatment of Precipitates, Preparation of Pure Substances and Double Salts.

More detailed instructions for handling vacuum drying, might have been added.

Systematic, model directions are to be found covering every step for the formation, collection and handling of quantitative precipitates. Under General Rules for Working, on p. 69, the authors offer many valuable instructions, often overlooked by professionals. Part I closes with instructions relative to note-book entries and use of factors, a most important precaution when one considers book-keeping from a student's standpoint.

Section IV.—Simple Gravimetric Estimations.

We take exception to the employment of the term "Estimation" in place of the more accurate and now generally accepted term "Determination," meaning a scientific evaluation based upon exact physical measurements.

Under this chapter, we find typical gravimetric determinations of all the common occurring elements with cross references to other chapters detailing other methods as well as separations, followed by three pages devoted to the electrolytic determination of Cu, Cd, Ni and Co.

Section V.—Volumetric Analysis.

The introductory paragraphs are excellent, among these, methods for calibration and comparative calibration. Pleased to note, distinctions between calibration for measuring and delivery are impressed on the reader. Points so frequently overlooked in textbooks. We see no necessity in devoting space to the Erdman float, long since discarded because of its inaccuracies.

We note that the only temperature employed for standardization and working, is the old one of 15.5° C., a temperature difficult to maintain in this country. This fault is partially covered by the statement—"any other temperature which is convenient—may be selected." It would have been advisable, since this textbook is published and used in this country, to have noted in clear unmistakable terms, that the temperatures of 20° and 25° C. are the standards prevailing in the United States.

Page 156, paragraph 290, "Stick Soda" is directed for making the N/I V. S. Why not direct the use of electrolytic sodium hydroxide? The former is of such variable water-content and quality that very few care to use it. The use of metallic sodium is unnecessary and dangerous in the hands of beginners.

It would have been well to instruct the operator to closely observe the standard temperature when making his final dilutions, an important point liable to be overlooked by beginners.

Excellent examples illustrating processes and their calculations, with other examples for practice, are given. These add so much to the real value of such a book.

Section VII.—Devoted to Processes of Oxidation and Reduction.

This includes the uses of Dichromate, Permanganate, Iodine and Thiosulphate V. S. Some of the methods of standardization are not much used in this country. Further, Arsenous Oxide V. S. might have just as well been omitted. Would suggest closer comparison with the methods of the U. S. Pharmacopœia which accord with those of our Governmental Departments.

Section VIII.—Unclassed Volumetric Estimations.

Halogens, cyanide, silver, copper, lead, zinc and phosphate.

PART IV—GENERAL QUANTITATIVE ANALYSIS.

Section IX.—Technical Analysis.

A great variety of excellent examples, calculated to give the worker broad and valuable experiences in all kinds of assaying, are given. This includes, the analysis, valuation and assay of alloys, ores, minerals, iron, steel, coal, etc. These cover practically every element. In addition to every native ore, we find glass, coal, slags, guano, phosphates, salt-cake, alloys, etc. The system of cross references employed in this work, are of the greatest value to the student or chemist, obviating needless repetitions and calling attention to comparative determinations.

Dry assays for lead, silver, gold and tin are given.

Section X.—Water Analysis.

Thirty-seven pages, systematically arranged, with emphasis on "Interpretation of the Results," are very good.

Section XI.—Part IV. Analysis of Food Materials.

The sections on Milk and Butter Analyses are rather concise, but excellently presented with useful "Remarks on Results of Analyses."

Under Wine and Beer Analyses, reference might have been made to the determination of

alcoholic content of alcoholic liquids in general. No note was made concerning liquids containing volatile acids.

Under the Quantitative Determination of Sugars, volumetric, gravimetric and polarimetric, we note absence of any practical handling of the polariscope. Possibly the authors left this to the class room. Next we find sections devoted to Partial Analyses of Tea, Tanning Materials and Soap. The latter is excellent.

Section XII.—Examination of Oils, Fats and Waxes, 25 pages with typical examples worked out. An admirable piece of work.

Section XIII.—Part V.

Determinations of Carbon, Hydrogen, Nitrogen and other Elements. The 27 pages cover the subject in a thorough and exhaustive manner and as far as possible, made comprehensive to the student—quite an art.

Section XIV. Determination of Molecular Weights.

Within the space of ten pages, this very important chapter in physical chemistry has been curtailed to general descriptions.

PART VI—VOLUMETRIC ESTIMATION OF GASES AND VAPORS.

Section XV.—The calculation of Volume of Gases under various conditions. Calibration of Measuring Tubes with water and mercury. Errors of Meniscus. Splendid practice and well executed.

Section XVI.—Explanation and handling of the Hempel apparatus with necessary reagents. Collecting, gases—determinations—then Gas analyses with examples covering 15 pages.

PART VI. SECTION XVII.—THE LUNGE NITROMETER.

Covers a variety of determinations made by this instrument. This is followed by Gas Determinations by Absorption and Titration according to Pettenkofer.

Section XVIII.—Vapor Density Determinations.

We note on page previous the expression—"Estimation" of Gas then "Determination of CO_2," then again—"Process of Estimation." Would suggest more uniformity in dropping 'estimation,'—a term too vague, especially in this connection.

The methods of Victor Meyer and Dumas are clearly described and adapted as adjunct to class demonstrations.

PART VII—TABLES FOR REFERENCE.

These cover a great variety of topics dealing with the subject matter, especially noteworthy, an excellent list of Books for Reference on all subjects treated.

An Index to Separations as well as General Index show careful work. So many authors try to save in printers' bills on their index, much to the annoyance and sometimes disgust of the reader.

The text, which is systematically arranged, is presented in a clear, concise and direct manner which recommends itself for the pharmacy as well as the chemistry student and professional chemists.

The press-work cannot be improved.

V. COBLENTZ.

Die Chemische und Mikrokospische Untersuchung des Harns. Ein Handbuch zum Gebrauch fuer Aerzte, Apotheker, Chemiker und Studierende. Bearbeitat von Prof. Dr. Edward Spaeth, Direktor der Staatl. Untersuchungsanstalt and der Universität Erlangen. 5 Auflage mit 111 Abbildungen, 2 farbigen Tafeln und einer Spektraltafel. Lex. 726 pp. 1924. Goldm. 26=.

The first edition of this masterwork appeared in 1897 and the present, fifth edition, is just off the press, a true proof of its popularity and usefulness.

The Chemical and Microscopical Analysis of Urine which is the title of the book before us, is becoming more and more important to physician, pharmacist and chemist. The author, a recognized authority on this subject, is professor at the University of Erlangen, Bavaria, and also director of the Laboratory of the State. It is to his credit that he wrote a book on the analysis of urine, both chemical and microscopical which is so thorough and detailed that it forms 726 pages. Verily a masterwork!

The following headings indicate the scope of the book:

I. General Part: Properties, Reagents and Methods of Analysis.

II. Chemical Analysis: Inorganic (cations and anions), Organic (divided into 44 chapters) and Odd Constituents (inorganic and organic).

III. Microscopical Analysis: General, Organized and Non-organized Sediments, Concrements.

IV. Concise, Practical Method of Urine Analysis.

How thoroughly and painstaking the author has compiled this work can be observed from the following examples.

In the determination of sulphur and sulphuric acid, seven pages have been written,

and qualitative and quantitative, gravimetric and volumetric methods are given.

The chapter on acetone comprises 18 pages giving 8 quantitative and 7 qualitative methods.

Almost 100 pages are devoted to the Carbohydrates which are cleverly divided into Pentose, Glucose, Levulose, Saccharose, Lactose, Maltose, Dextrins and Glycogen.

Each chapter gives the history and origin of the substance in the urine, the causes, properties and effects. Tests and other matters of minor importance are in smaller type and the important facts and cautions are in heavy type. In each case the author frankly states his own opinion or that of other authorities as to the value of the test and at the end of the chapter he recommends the one most reliable.

The numerous illustrations and the colored tables, works of art, help to elucidate the text and can be highly appreciated, especially by the student.

The book abounds in bibliographic references and footnotes, as many as 18 on one page, and is therefore extremely valuable to the research worker.

The author has most certainly achieved a real success, as he has collected in one volume a great amount of material hitherto inaccessible except in the extensive literature on the chemistry and microscopy of urine.

Analytisches Diagnostikum. Die chemischen, mikroskopischen und bakteriologischen Untersuchungs-methoden von Harn, Auswurf, Magensaft, Blut, Kot, etc. Von Dr. Ernst Kraft, Besitzer des bakteriologisch-chemischen Laboratoriums in Bad Kissingen. 3. Auflage mit 147 Abbildungen im Text und 5 farbigen Tafeln. Octavo 480 pp. Gold Mark 14.

"From the practice for the practice" is the motto of this book written by a German apothecary who conducts a clinical laboratory at that fashionable spa Kissingen, made famous by Bismarck. The seven parts of the work treat the analysis of Urine, Secretion of the Sexual Organs, Puncture Liquids, Sputum, Stomach Contents, Feces and Blood.

The chapter on Albumin comprises 25 pages and contains 5 quantitative and 7 qualitative methods. As the most sensitive one Kraft recommends the "Sulphosalicylic Acid" test, which the referee can fully endorse having used same for over 20 years. At the end of the part on urine analysis, sample copies of reports are given in German, French, English, Italian, Polish and Russian.

The part on Blood is very thorough and comprises 75 pages. It is subdivided in General Properties and Spectroscopy, Chemical, Microscopical, and Bacteriological Analysis and Pathological Blood.

On p. 459 in the Appendix the printer's devil produced *Obermeyer* (same as in U. S. P. IX, p. 630). It was Fr. *Obermayer* who first published his Indican Reaction in Wiener Klinische Wochenschrift 1890, p. 176.

The 5 colored plates in the book contain respectively five, five, two and twenty-three excellent illustrations, real works of art.

In view of the prominent place which clinical pathology occupies to-day, and rightly so, in the diagnosis and treatment of disease, the book before us is highly important. It is a practical hand and reference book which we can highly recommend to laboratory workers and pharmacists in particular. Let us hope that it will also become better known outside of the "Vaterland."

OTTO RAUBENHEIMER, PH.M.

PROCEEDINGS OF THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION IN CLEVELAND.

The 1923 *Proceedings of the National Wholesale Druggists' Association* containing the complete stenographic report of the convention at Cleveland in October, has been distributed to members. The volume consists of 688 pages and contains in addition to the convention proceedings, portraits of the officers and directors and a complete roster of active and associate members indexed alphabetically and by states and cities.

The N. W. D. A. Year Books, of prior conventions, have been reviewed in these columns a number of times. The general outline of the proceedings is not very different from other years and, as those of other editions, the reports of various committees are valuable documents, not only for the members but for all associated with the drug industries.

DEATH OF MRS. L. E. SAYRE.

Just before completion of this issue of the JOURNAL word was received of the death of Mrs. L. E. Sayre. Members of the Association express sympathy to Ex-president Sayre and family in their bereavement. The deceased had been in poor health for more than a year.